2024 SYMPOSIUM PROCEEDINGS

Edited by Axton Betz-Hamilton

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VetCents: Connect Better with Clients

Blake Allison, Founder & CEO, LifeCents and Andia Dinesen, Chief Operating Officer, Association of Military Banks of America

Keywords: engagement**,** financial wellness, personalized approach**,** behavioral change**,** veterans

Target Audience

Coaches, counselors, and educators are the intended audience for this presentation. We will share how attendees can register and explore a bespoke financial wellness platform at AFC.VetCents.org for the military community (or just veterans?). Financial counselors and educators can discover how VetCents can become an indispensable tool and resource to enhance client engagements, strengthen client relationships, and support measurable outcomes. This session can be attended by anyone working with military-connected clients, whether they are beginning, intermediate or advanced.

Objective and Purpose

VetCents' personalized approach to financial wellness ensures that each participant has access to relevant and actionable guidance and action plans, as well as the tools, and resources that are directly applicable to their unique financial situation. Rather than a one-size-fits-all solution, VetCents creates interactive experiences that are relevant to the diverse backgrounds, experiences, and aspirations of Veterans and their families. The program provides each participant with a customized roadmap to help them achieve their financial goals and improve their overall financial well-being.

Description of Program

Relaunched in November 2024, VetCents is a personalized financial wellness program that takes a tailored approach, recognizing that each Veteran, VA beneficiary, and caregiver has unique circumstances, goals, and challenges. VetCents is one pillar of the Veterans Benefits Banking Program (VBBP), allowing VetCents to support the financial wellbeing of our military Veterans and family members as they navigate their financial journey.

The VBBP was created in partnership with the Association of Military Banks of America (AMBA) and the U.S. Department of Veterans Affairs (VA) in 2019 to address the hundreds of thousands of under and unbanked Veterans receiving monetary benefits from the VA. The VBBP offers more than 100 financial institution options for Veterans, VA beneficiaries, and caregivers to help get them banked! The VBBP has expanded now and offers additional options to help this community with their financial wellness which includes financial and credit counseling options along with VetCents.

Broadening our Perspective of our Communities

Jason Andrade CFP® & Tania Shabazz, AFC®, Compass Working Capital

Keywords: asset building, client driven strategies, cultural humility, cultural competence, financial coaching and counseling, financial capability, goal setting, inclusive counseling

Target Audience

This training is designed for professionals who work directly with families with low incomes. This includes financial coaches, counselors, and decision-makers in various industries. It is also useful for organizations considering adding financial or counseling services to their programs.

Objective/Purpose

The training will equip coaching practitioners with a deeper understanding of how racial and ethnic backgrounds influence financial values and behaviors. By exploring societal norms, historical injustices, and personal experiences, participants will develop greater cultural sensitivity and awareness of biases. The workshop will delve into topics such as redlining, predatory lending, and urban renewal to illuminate the systemic factors that contribute to the racial wealth gap. Through interactive exercises and discussions, participants will gain insights into how these factors shape financial decision-making and interpersonal interactions within financial-related services. By emphasizing the importance of openness, curiosity, humility, and continuous learning, the training aims to help attendees build stronger relationships with their clients and achieve better program outcomes. Ultimately, the goal is to empower practitioners to provide more inclusive and effective support to clients from diverse backgrounds.

1. **Attendees will be able to deepen client relationships & trust:**
   - By integrating cultural humility and competency, financial coaches can build stronger relationships with clients from diverse backgrounds, fostering trust and open communication – essential for effective coaching.
2. **Attendees will be able to tailor strategies & improve outcomes:**
   - Understanding cultural influences on financial decisions allows coaches to tailor strategies that resonate with client's values and goals, ultimately leading to better financial outcomes.
3. **Attendees will be able to break down barriers & expand reach:**
   - Cultural competency equips coaches to address financial challenges faced by underserved communities, promoting financial inclusion and empowerment for all

Description

Compass Working Capital (Compass) is a national nonprofit organization working to end asset poverty for families with low incomes and narrow the racial and gender wealth divides. To achieve our mission, we operate client-centered savings and financial coaching programs. This session combines Compass' two principal training courses (Cultural Humility and Competency, and Money Values) for new financial coaches. This training highlights the importance of learning more about the community and background of the families that financial coaches and counselors work with, including the various lived experiences that shape their worldview and decision-making. Equipping practitioners and other direct services staff with a better understanding and effective approaches to building more open and trusting relationships will ultimately lead to better outcomes for the families they serve.

After this session, attendees will develop a better understanding of what cultural competency and cultural humility are, how family life and our upbringing shape our values when it comes to money, and how to be more aware of implicit and explicit biases when building relationships with families/individuals from different backgrounds. The session will encourage attendees to broaden and potentially shift their mindset and approach, as well as provide practical tools and resources to integrate these learnings into their work.

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Enhancing Financial Literacy Among Providers & Military Caregivers:

Innovative Strategies and Approaches

Rachel Brauner, Texas A&M AgriLife Extension, Nichole Huff & Kristen Jowers, University of Kentucky

Keywords: caregivers, financial literacy, healthcare, military, providers

Target Audience

The target audience for this presentation includes direct or indirect military family service providers including financial counselors, educators, caregivers, case managers, patient advocates, and military transition professionals. This session presents a critical opportunity for financial counselors to deepen their understanding and skills in a highly specialized area of financial literacy by illuminating the intricate landscape of military caregiving and the pivotal role financial counselors play in alleviating financial burdens through effective system navigation and advocacy.

Objectives/Purpose

This *Putting It into Practice* session will showcase OneOp, a virtual professional development platform supported by the Department of Defense (DoD). OneOp provides innovative strategies that financial counselors can employ to improve healthcare and financial literacy for military caregivers. Its partnership with the DoD ensures that programs are flexible and responsive to immediate and changing needs and promotes engagement with underserved military support professionals, which empowers them to better assist and support family caregivers and military-connected communities.

After this session, attendees will be able to: (1) Identify unique financial and healthcare challenges faced by military caregivers; (2) Examine specialized financial literacy programs to boost economic stability for military caregivers; (3) Learn to use OneOp to help financial counselors and caregivers navigate complex medical systems like TRICARE, Veterans Affairs, Social Security Administration, Medicaid, and Medicare; and (4) Discuss professional development initiatives that equip financial counselors with skills to support military-connected families effectively.

Description

Military caregivers provide a variety of support functions and may take on case manager roles, such as navigating various health systems, advocating for new treatments, and serving as financial and legal representatives. The role of financial counselors is especially critical as military caregivers must navigate numerous government systems to secure care, services, and benefits for the veterans/service members they support. Effective coordination of diverse systems necessitates an understanding of unique eligibility criteria and benefits, and how to maintain continuity of care across different operating structures. By integrating resources from OneOp and leveraging successful partnerships with entities like the DoD and Cooperative Extension, financial counselors will be equipped to provide more comprehensive support.

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The Caregiver Financial Journey

Katie Casey-Macias, CFP®, The USAA Educational Foundation & Shawn Moore, LMSW, The Elizabeth Dole Foundation

Caregivers of veterans and service members face challenges on the journey to financial well-being. The *Caregiver Financial Journey*, created by The Elizabeth Dole Foundation and The USAA Educational Foundation, provides financial education to address economic factors that impact stability and achievement of future goals at each stage of the caregiver journey. This program seeks to empower caregivers with a financial well-being framework to take charge of their financial future.

Target Audience

Financial counselors and educators working with the military community and those who care for veterans and service members are the intended audience for this presentation. Others who are interested in learning more about this resilient and diverse community are encouraged to attend.

Purpose

The 2014 RAND report, *Hidden Heroes: America's Military Caregivers,* found that there are more than 5.5 million military and veteran caregivers in the United States, with this number likely growing in the past decade. These hidden heroes are spouses, parents, children, family members, and friends who care for America's wounded, ill, and injured veterans and service members. Financial obstacles due to caregiving can include reduced income, difficulty obtaining and maintaining employment, increased medical costs, and the inability to save for future financial goals like retirement. Supportive benefits and resources for this community depend on a variety of factors including their relationship to the loved one being cared for, age, and employment status.

Military and veteran caregivers are a diverse group of spouses, parents, family members and friends who often face significant financial challenges directly related to caregiving. An initial challenge that some may face is feeling disconnected from supportive programs and resources. Caregiver self-identification can help this community connect with peer support, gain access to local, state, and federal programs and benefits, and raise awareness for legislative and policy changes.

The session will highlight the tools and resources in the *Caregiver Financial Journey* that were developed for and by caregivers through meetings, focus groups, and interviews with caregivers experiencing the daily challenges and opportunities of caring for their loved one.

Description

The *Caregiver Financial Journey* is a self-paced program that caregivers can access on their schedule and based on their interest, needs, and caregiving stage. It consists of two components: the Financial Health Assessment for Caregivers and the Caregiver Financial Wellness Guide.

The Financial Health Assessment for Caregivers is a robust calculator that provides an overview of financial strengths and opportunities for growth. It can be difficult to gauge and prioritize financial goals while caregiving so this tool provides tailored feedback, expert suggestions, and actionable results that can assist with prioritizing goals.

The Caregiver Financial Wellness Guide covers foundational financial topics including goal setting, budgeting, emergency savings, understanding credit and debt, insurance, investing, and estate planning. It is incorporated with the three stages of caregiving as outlined in the *Caregiver Journey Map*:

1. Becoming aware and adjusting
2. Shifting priorities and seeking help
3. Finding a rhythm

Challenges exist in every stage, and caregivers may move in and out of stages throughout their journey. Financial counselors and educators can provide professional guidance at every juncture and use the tools and resources included in the *Caregiver Financial Journey* to help clients from this community develop solutions and access support, leading to increased financial well-being and empowerment.

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Stand Out! Strategies for Hiring Success in Government and Contracting

Dedrick Curtis, Zeiders Enterprises, Inc.; Andi Madden Wrenn, Coaching Capability; Lynne Patterson, Zeiders Enterprises, Inc.; Stacey Marie Pennington, MSM, US Air Force Reserves

Keywords: AFC®, career exploration, employment, federal employment, networking

Target Audience

This session is tailored for individuals interested in securing employment within the federal government or federal contractor space, particularly those seeking roles in the financial sector.

Objectives/Purpose

The primary objective of this session is to equip participants with the knowledge and practical skills required to stand out in the competitive job market for government and contracting roles. Attendees will learn how to structure their federal and non-federal resumes effectively, prepare for interviews, leverage networking opportunities, and showcase their volunteer experience as an asset.

Description

In the competitive landscape of job success, particularly within the financial sector, it's essential to differentiate oneself. This panel discussion, designed for financial professionals aspiring to work in the government or contracting space, offers a comprehensive overview of strategies and insights for standing out in job searches and career advancement. The session will delve into the differences between federal and non-federal resumes, interview preparation, and networking tactics.

The panel, consisting of experts with over 51 years of combined experience in hiring and aiding more than 7,000 persons in securing jobs, will share their knowledge and provide practical tips. The format includes a moderated discussion with a series of focused questions on key areas such as resume writing, interview preparation, networking, and effectively highlighting volunteer experience. Following the panel discussion, there will be an interactive Q&A session with the audience, supplemented by a set of resources on screen.

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Effective Communication Strategies for Bilingual and Monolingual Financial Professionals Working with LEP Clients

Lucy Delgadillo, Sofía Monzón, & Elsa Perez, Utah State University

Keywords: financial interpretation, cultural competence, limited English proficiency, and inclusive financial services**.**

Target Audience

The intended audience is all financial professionals who are bilingual, or monolingual professionals and who team up with community interpreters (CI), to ensure clients with LEP skills can access the financial information and support they need. Additionally, all financial professionals who would like to enhance their ability to understand and serve diverse populations effectively by understanding cultural differences and sensitivities.

Objective/Purpose

Given the importance of transparent and accurate communication in financial matters, especially when dealing with Limited English Proficiency (LEP) clients, bilingual financial counselors would benefit from learning best practices for interpreting, how to manage the flow of a financial session, and how to become mindful of cultural differences and sensitivities to create a welcoming and inclusive environment for all. Monolingual financial counselors will benefit from learning how to team up with community interpreters and interpretation services to better serve LEP clients.

A community interpreter (CI) — also known as a public service interpreter — and in our case, a financial interpreter, is a professional who possesses strong language skills in both the source and target languages and cultural competence and sensitivity, among other competencies.

Learning Objectives/Key Takeaways

1. Attendees will be able to identify the roles of interpreters and the value of their professional code of ethics.

2. Attendees will be able to demonstrate the three modes of interpreting and when to use each.

3. Attendees will identify six guidelines for facilitating the flow of the financial session.

4. Monolingual financial counselors will learn best collaboration practices with financial interpreters.

Practical Insights: Based on the literature of translation and interpretation studies (TIS), the content of the seminar will equip you with a brief description of the code of ethics, interpretation protocols, and skills, distinct roles that an interpreter can take, and different modes of interpreting. You'll gain answers to several important questions, such as when can an interpreter advocate? Why is it important to speak in the third person? How is an interpreter different from a translator? When does an interpreter become a cultural broker? Where does the interpreter place him/herself in a triadic encounter? Does he/she sit or stand? When is an interpreter allowed to do sight-translations? Etc.

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Promoting Financial Capability Among High School Girls: Invest in Girls Program

Bernice Dodor, East Carolina University

Target Audience

The IIG program targets high school-aged girls. This AFCPE session is for financial educators who work with teenagers/high school female students or want to volunteer time and expertise to bridge the gap between the classroom and the financial industry, as change can be created and sustained when the younger generation is informed and educated.

Objective/Purpose

The IIG program utilizes a holistic approach to help students learn financial concepts, develop personal finance skills in workshops, and gain the knowledge and skills required to enter pathways to the financial industry. Three workshop modules offered are (1) Be the CFO of your life, (2) Be the CIO of your life, and (3) Be the CEO of your life. The mentoring component aims to help the participants develop not only field knowledge but also to envision themselves as female leaders in finance.

Learning Objectives/Key Takeaways

1. Attendees will understand how to implement the IIG program in high schools and the community to empower female students with financial literacy.
2. Attendees will develop an awareness of IIG resources and volunteer opportunities for financial educators/counselors to reach people in low- and moderate-income schools.

Description of Content and Method

This session presents Invest in Girls (IIG), an innovative core model for financial education designed by the Council for Economic Education (CEE). It aims to teach financial literacy to high school girls to boost their confidence in making personal financial decisions and increase the number of women in finance and the finance-related workforce.

This initiative has the potential to leverage evolving demographics to promote diversity and inclusion within the financial services sector. Participants of Invest in Girls will enter the professional world equipped with the expertise and self-assurance to deliver impactful outcomes.

This AFCPE presentation will cover (1) an Overview of the IIG program, (2) the Program Core Model, (3) the Impact of the program, (4) Accessing the program, (5) Volunteer opportunities, and (6) Share suggestions for replicating the program.

Impact

The "Invest in Girls" (IIG) financial literacy program was created based on research showing that only 12% of girls feel confident making personal financial decisions and only 16% of Executive Committees and 20% of Corporate Boards are female (Invest in Girls, 2024). Although the number is anticipated to grow, the proportion of female leaders in the financial industry will still be well below parity at 31% in 2030 (Park et al., 2021).

The author partnered with the State CEE to implement the IIG program core modules with females at Early College High School. Program participants went on industry trips (at Fidelity Investments Campus) to experience female roles and what it's like to work in the financial industry. The role model component of the IIG program offers tailored guidance to meet individual needs and career aspirations by connecting the participants with female leaders in the industry.

The ongoing longitudinal study of IIG at Boston University found that students who participated in the program showed a 220% increase in confidence in engaging in financial literacy. Additionally, students experienced a 58% increase in interest in a career in finance and a 98% increase in understanding of careers in finance (Park et al., 2021). Over 75% of the students involved in Invest in Girls come from underrepresented communities and low-income households. IIG program empowers Gen Z, the most diverse generation, with knowledge and confidence to drive inclusion in the financial industry for future generations.

Research Implications/Questions for Researchers

Several avenues of potential research can be derived from this program.

1. Pre-post studies on participants' financial knowledge of each core model
2. Investigate how the IIG program influences female students and their career decisions/opportunities.

References

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Faith & Finance: A Stewardship Journey

Don Fulton, M.Div., M.Th., AFC®, CRC®, FFC®

Keywords: abundance, faith, giving, personal finance, stewardship

Target Audience

The target audience for this session is financial professionals working with clients whose faith traditions are a significant factor in their personal financial management and wellbeing. This presentation leans heavily on Christian traditions and does not intend to be exclusive. There are many faith traditions and many paths even within Christianity. The hope is that other faith traditions look at how their stewardship practices impact financial decision making and share those findings in future presentations.

Objectives/Purpose

a. Learn about the intersection of faith and finance in financial decision making.
b. Emphasize how the words used to describe one's faith can be seen as an asset.
c. Explore the mindset of abundance versus scarcity in personal stewardship.

Description

This journey began when a clergy colleague and social worker approached me regarding financial questions that arose during her pre-marriage couple's workshops. She admitted that finances were not her area of expertise. This was the seed of the idea for Money for Two Workshops, LLC. I then reflected on my own training, experiences, and education. As I shared my intent with friends, they were supportive, provided communication ideas and even developed a brochure. Another friend said, "You need a website." I connected with the Service Corps of Retired Executives (SCORE) for mentoring and resources. I networked with clergy, employee assistance programs, adult community education, etc. My workshops include faith components. In secular settings I taught classes where I adjusted the focus to values.

In many faith communities the understanding of stewardship is often influenced by a written text. Understanding the language used through story, teachings, and prayer, at times, may be a challenge or, at other times, an asset. In Genesis 1:1-2:4 NRSV, also known as the creation story, language used such as "dominion" and "subdue" are used in a much different context than they are today. Exploring these subtleties can be helpful in developing one's own personal stewardship practices. The Story of Joseph, in Genesis 37:1-47:26 NRSV, illustrates the impact on people's lives that stewardship decisions can have. In his story there is a mix of dreams, family dysfunction, and hardship, but in the end, there is blessing and redemption.

In today's culture we are bombarded with thousands of advertisements that tell us we are not good enough. We are overwhelmed by messages that emphasize scarcity; however, some faith traditions offer a message focusing on abundance and hope. Within faith communities, stewardship can be practiced in multiple ways. This practice is not limited to giving money. The talk about money is one part. The managing of resources like time, talents and possessions is equally important. As financial professionals, the field we are in is often viewed as transactional. However, it is also relational. Faith and finance are one intersection that highlights the connection. By expanding our worldview of faith and finance both personally and professionally we can better serve our clients and empower everyone on the stewardship journey.

Stewardship is a quality of leadership to be nurtured and developed.

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Trauma-Informed Financial Counseling: Navigating Client Histories for Improved Economic Outcomes

Jeffrey Furlong & Briana S. Nelson Goff, Kansas State University

Keywords: Health and financial issues; Coaching and counseling competencies; psychology of money

Target Audience

The session aims to cater to professionals such as financial counselors, mental health providers, and other human service professionals who navigate the balance between financial guidance and emotional well-being. It provides both a foundation and advanced elements to challenge and encourage professionals. The session takes a holistic approach, delivering a well-rounded perspective on how financial advice impacts both the wallet and the heart. Participants will leave with an enriched breadth of knowledge and an enhanced toolkit for integrating these interdisciplinary skills into their practice.

Objectives/Purpose

Attendees will acquire the knowledge and skills required to create a theory-based practice strategy that helps clients identify and connect previous trauma and adverse life events with current financial behaviors. Through understanding a trauma-informed theoretical frameworks and available models that the presenter will provide, participants will be able to apply these principles, providing a trauma-informed approach, in their practice. As a result, they will be in a better position to help clients understand how trauma has affected their lives. Research by Foa, et al. (2013), has shown that trauma-informed treatment can significantly reduce symptoms of post-traumatic stress disorder.

Attendees will gain the ability to analyze how previous trauma influences clients' current financial habits. A focus on sharing experiences in small and large groups, will allow participants to learn from each other's experiences and gain insight into how trauma manifests in clients' behaviors and coping mechanisms. For instance, a study found a strong relationship between traumatizing experiences throughout childhood and a range of undesirable behaviors, including financial behaviors (R. F. Anda MD, 2006). A knowledge of these connections can help treatments meant to break unhealthy habits and promote better ones.

Attendees will be able to weigh the benefits and drawbacks of their current approach and learn from the experiences of others through collaborative discussions and idea exchanges. As a result, they will be able to develop original strategies and solutions that are appropriate for the unique needs and circumstances of their clients. Research shows the benefits of networking and idea-sharing for problem-solving and career advancement. For example, Reagans and McEvily, (2003) found that increased information sharing and professional participation within a network enhanced individual performance and encouraged collective innovation.

Description

This session will enable participants to create a trauma-informed theory-based model for practice that empowers clients to recognize the connection between previous trauma and current financial habits, providing a path forward to goal completion. The session will leverage small- and large-group sharing about the strengths and weaknesses of participants' current approaches. The presenter will provide trauma-informed theoretical frameworks and available models via collateral, participants will make tailored conclusions for practice. The networking and sharing of ideas aim to culminate in a cohort of participants better equipped to serve clients by articulating and accomplishing their financial goals.

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Engaging the Empathy Muscle

Sasha Grabenstetter, AFC®, BFA™, eMoney Advisor

Keywords: financial counseling, financial coaching, empathy, self-awareness

Target Audience

Accredited Financial Counselors®, AFC® Candidates, Financial Professionals, Students

Objective or Purpose

This session will be highly focused on the research and application of empathy. We will examine the definition of empathy, the different types of empathy, and the research on why empathy can be challenging. Additionally, we will explore why we may not feel empathetic towards certain individuals and how we can grow and strengthen this skillset.

Description

According to Brene Brown "We need to dispel the myth that empathy is 'walking in someone else's shoes.' (2022) Empathy is much more than an idiom for the way we should treat others. Empathy is a lifelong skill that can be utilized by a financial counselor to strengthen relationship bonds and work more openly with a client's finances. However, empathy is hard work and has a heavy cognitive load, especially when working with people we don't know very well, like our clients. "When given the opportunity to share in the experiences of strangers, people chose to turn away." (Cameron et al, 2019) Furthermore, we may even penalize those individuals who struggle to cope with similar ordeals. (Ruttan & Nordgren, 2017)

How do we strengthen the skill of empathy when it's cognitively costly and we may jump to judge others for experiences we've already been through, especially as financial counselors who may come into this field from our own personal finance pitfalls? Building the skill of empathy comes from a combination of compassion, self-awareness, active listening, and practice.

Many of the financial counseling stories from our profession are born from compassion – the desire to alleviate suffering of others. Empathy focuses on the willingness to take on perspective because we can't always remove clients' anxiety or stress around finances. Emotional empathy is wonderful to use with family and friends, but ultimately leads to burnout when used consistently with clients. We want to grow and use our cognitive empathy muscles with our financial counseling clients. Cognitive empathy is focused on understanding the pain, but the counselor does not actually experience it themselves. By being able to sit with our clients and not get wrapped up in their emotions, we can be the lighthouse in their financial storm—a calm, guiding light to keep them away from the rocky financial shore.

Empathy helps to build healthy client-counselor relationships. This deep dive into empathy will contribute to financial counselors to be more effective and altruistic overall.

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Inside Out: Self-reflection for Financial Counselors

Sasha Grabenstetter, AFC®, BFA™ & Emily Koochel, Ph.D., AFC®, CFT-I™, BFA™, eMoney Advisor

Keywords: financial counseling, financial coaching, empathy, interior work

Target Audience

This session is designed for all AFCPE members, particularly Accredited Financial Counselors®, AFC® Candidates, and individuals pursuing these credentials. It is particularly relevant for symposium attendees interested in exploring self-introspective methods related to financial socialization, past money experiences, and other relevant topics.

Objective or Purpose

The goal of this session is to initiate an exploration of the financial counselor's internal work that helps to uncover their own financial behaviors and outlooks. "Financial counselors who are intentional in their efforts to continually enhance their self-awareness are likely to be substantially more effective in helping clients" (Goetz et al., 2018, p. 65).

Description

Financial counselors are attracted to this profession with the intention of assisting others, however, it is essential to recognize that our own personal viewpoints will inevitably impact and mold the relationship between counselor and client. This session offers an opportunity to delve into the realm of self-reflection and provide individuals with tools and activities to effectively manage their interactions with clients from the inside out.

Advice given by financial professionals can impact both the financial and emotional wellbeing of clients. Throughout the counseling process, clients seek assistance from financial counselors to achieve their financial goals. However, counselors bring their own backgrounds, biases, and values into the equation. As financial counselors, it's crucial for us to examine our own biases, influences, and past financial decisions. This is where we can begin to gain a deeper understanding of ourselves and build self-awareness.

So, what skills or experiences are essential for us to consider? One of the most effective methods for financial counselors to truly understand what it takes to provide sound financial advice is by gaining an understanding of their own financial hurdles and identifying areas for personal improvement. To begin, counselors can engage in exercises related to money. According to Klontz and colleagues (2016), 'one of the most important aspects to consider in beginning interior work... is to become conscious of your own money scripts' (Klontz et al., 2008). Identifying and examining one's money scripts through introspection can help reveal areas where the financial counselor may be facing challenges in their own financial life. Counselors can further uncover the generational transmission of money-related attitudes, beliefs, behaviors, strengths, and vulnerabilities by exploring their own money history and socialization. Additionally, counselors should engage in exercises and assessments that help develop empathy and emotional intelligence, as both require self-reflection and self-awareness. By understanding our own emotions and experiences, we can better understand and regulate our responses, leading not only to greater personal growth but also to better-informed financial counseling.

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Financial Considerations for Natural Disaster Readiness & Response

Nichole Huff & Kelly May, University of Kentucky

Keywords: financial education, financial planning, recovery from financial shock

Target Audience

The target audience for this *Putting It into Practice* session includes financial practitioners, educators, researchers, and students. The presenters will discuss practical financial and resource management skills related to natural disaster preparedness and will showcase a recent success story highlighting how disaster education can be incorporated into financial education and planning sessions. As financial professionals, it is vital to seek creative ways to engage and educate audiences on financial education topics. This includes disaster education and planning, which encompasses more than a family's finances, but also their belongings, emotions, safety, and more.

Objective/Purpose

This session will overview financial considerations clients should take before a natural disaster occurs and in response to an adverse weather event. The presenters will highlight a nationally award-winning University of Kentucky Cooperative Extension program, *In the Face of Disaster: An Agent Toolkit for Disaster Recovery and Response*, that offers research-based education that has been translated into practical resources designed to educate and equip clients.

Participants will learn: (1) financial considerations and action steps when preparing for a natural disaster; (2) financial considerations and action steps when recovering from a natural disaster; and (3) Extension resources to use when providing disaster education or planning services.

Description

Natural disasters can occur any time, with impacts felt across most areas of family life. Because there is no "one size fits all" disaster model, helping clients prepare for a myriad of natural disasters can be challenging. This session overviews the University of Kentucky Extension program, *In the Face of Disaster*, and details how interested financial professionals can utilize the materials with clients at no cost. The guidance and resources presented follow the National Disaster Recovery Framework, which suggests ways to effectively meet the needs of community members who experience hardships of financial, emotional, and/or physical impacts of devastating disasters.

Attendees will learn ways to educate clients on preparing their finances, insurance policies, resources/assets, etc., before a disaster occurs, as well as how to respond in the event clients are faced with a disaster. This includes documenting and reconciling losses, consumer protection and scam prevention, types of disaster assistance, and tips for financial recovery. The multimodal program includes print and digital resources, podcasts, and social media engagement strategies. Each lesson contains an Extension publication(s), facilitator's guide, presentation slide deck, lesson activities, evaluation, and marketing package for either online or in-person delivery. Deliberate attention was given to creating more comprehensive, cross-disciplinary collaborations between four distinct Family and Consumer Sciences Extension content areas: Family Finance and Resource Management; Nutrition and Dietetics; Parenting and Child Development; and Family Health.

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Budget Mastermind Workshops: Empowering Participants with the Zero-based Budgeting Method

Melanie D. Jewkes, Andrea T. Schmutz, Amanda H. Christensen, AFC®, Lendel Narine, & Vincenza Vicari-Bentley, AFC®, Utah State University Extension

Keywords: budgeting, debt reduction, financial education, financial well-being, savings strategies

Introduction

The Federal Reserve's interest rate hikes beginning in 2022 exacerbated the cost of debt, putting further strain on already stretched budgets. Many Americans lack adequate emergency savings, leaving them vulnerable to financial shocks. It is vital for individuals to develop robust financial skills to navigate challenges effectively and plan for future goals and priorities.

Description

From January to May 2024, a team of Accredited Financial Counselors, Utah State University Extension faculty and personal finance educators organized and taught nine Budget Mastermind workshops to 140 people throughout Utah. Structured in community or educational settings, workshops ran from 9:30am to 2:30pm with lunch included.

Each Budget Mastermind workshop featured at least three presenters to offer diverse teaching styles and personal financial insights, which many participants appreciated. Centered on the zero-based budgeting concept, workshops began with a case study of a family's zero-based monthly budget that integrated goals and financial best practices such as saving for emergencies, investing for retirement, reducing debt, and allowing spending to accommodate personal autonomy and priorities.

After detailing the case study, participants received instructions and time to complete worksheets (provided). Instructors guided participants through a Money Habitudes® activity to introduce money personalities and perceptions. The workshop utilized resources from the Consumer Financial Protection Bureau to guide participants through goal setting, developing good spending habits, brainstorming ways to earn more money and/or cutting back expenses, and incorporated PowerPay to teach debt reduction. Instructors led discussions on shifting into a growth mindset, and taught skills to develop financial resilience.

Evaluation

An evaluation process following the Targeting Outcomes of Programs (TOP) framework (Rockwell & Bennett, 2004) implemented immediately post-workshop evaluated understanding of personal finance best practices, measuring short-term outcomes (i.e., knowledge gain and confidence gain) and intention to implement change. Evaluation results (n = 137) showed knowledge gained included the following:

- 91% gained knowledge regarding setting financial goals.
- 90% gained knowledge of methods and benefits of tracking expenses.
- 83% learned behaviors to effectively build savings.
- 55% learned methods of creating a debt elimination plan with PowerPay debt elimination calculator.

Confidence gained and intention to change included the following:

- 99% had a better understanding of personal finance management.
- 97% felt more confident about their ability to manage their finances.
- 96% intended to use the information from the workshop to make positive changes to their personal finance management practices.

Results show this 5-hour workshop promotes impact in helping consumers understand the importance of financial well-being, how to reach their goals, and how to develop financial resilience.

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Impacts of Virtual Professional Development

Jesse Ketterman, Jr., Dorothy Nuckols, Carrie Sorenson, Troy Anderson, & Crystal Terhune, University of Maryland

Keywords: financial education, virtual professional development, seminars, education

Objectives/Purpose

Using a train-the-trainer approach, seminars can provide relevant resources and financial information to professionals to better prepare them to serve their clients in enhancing their financial wellbeing. Delivering in a virtual environment can be challenging to measure impact and reach of the program. This session provides insight on the results of an annual virtual seminar with data from both pre and post COVID. The seminar is coordinated by a set of University Cooperative Extension financial professionals. The objective is to provide relevant financial information and resources via a virtual environment to financial educators, financial professionals, and financial counselors. For the past six years, the seminar was offered virtually.

Background

This program is based on previous research that suggests that trainees' intentions to employ a process can be influenced through training sessions, which could also result in positive performance outcomes. The technology acceptance model (TAM), an extension of TPB by (David et al., 1989), steered the development of this training intervention relying on the premise that a trainee's process-related beliefs can be influenced through online training sessions, which in turn can influence their intentions to use a process (Olfman et al., 1991; Venkatesh, 1999). Therefore, conducting the online personal finance training sessions for professionals based on the framework of TAM may increase the prospects of elevated intentions and utilization of the curriculum by professionals.

Results

Participants in the seminar are provided a pre, post, and 3-month evaluation to measure the impact of the seminar. The post survey provides insight into what participants intend to do with the knowledge shared as it relates to one of our key indicators. The average of all the years indicates that 88% plan to apply knowledge and skills with clients. For two of the four years, participants were quite a bit more able and for the other two years, the participants indicated just below quite a bit more able. The results also indicate that participants were likely to share what they learned with others, that participants are comfortable with, and able to apply what was learned with others.

We sought insight on participants' comfort in using the virtual environment to learn financial information Data compares pre and post survey questions related to comfort using a web based environment and learning financial information via a web-based environment. For each of the years measured, there was an increase in comfort in learning from a web-based environment. When asked about learning financial information and skills via web platform, the results are more interesting. For the two years prior to the pandemic, there was an increase, but the two years following there was either no change or a negative change in mean average.

The three-month follow up survey included questions about the benefit and application of knowledge learned. For the three years that the question was asked, over 90% of participants agreed or strongly agreed that they had applied the knowledge and skills gained and benefited from the information. When asked if they incorporated what they learned into their work, the results indicate they were somewhat or quite a bit likely to do so.

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The Best-Kept Asset-Building Secret in Subsidized Housing

Dwayne Keys, AFC®, & Luttasha Taylor, SHRM-CP, AFC©; Compass Working Capital

Keywords: asset building, financial coaching and counseling, financial capability, goal setting, housing, participant-led strategies, opt-out approach to increase asset-building.

Target Audience

Individual practitioners, financial coaches/counselors, or institutions with an interest in extending their expertise to families with low incomes, practitioners working with families with low income.

Objectives/Purpose

The purpose of this session is to raise awareness among practitioners and to share our unique asset-building model to the Family Self-Sufficiency (FSS) program and the promise of an opt-out approach to increase asset-building opportunities for families with low incomes. We also seek to highlight participant-led strategies for financial coaching and goal setting that are transferable and can be integrated into other program and service delivery models.

Attendees will:

1. Learn about an asset-building model to the Family Self-Sufficiency (FSS) program as a powerful vehicle to narrow the gender and racial wealth divides.
2. Learn strategies for incorporating a participant-led approach to financial coaching and goal-setting that can be integrated into their own practice.
3. Explore the promise of an opt-out model to the FSS program as an innovative approach to increase access to wealth building for families who live in federally subsidized housing.

Description

We all need assets to invest in the future and move our families forward. Yet many families with low incomes are also living in asset poverty, meaning they do not have the savings needed to cover even three months of basic living expenses without income. For these families, the opportunity to build assets is out of reach: anti-poverty programs often discourage or penalize savings, and these penalties intersect with systemic and historic barriers to wealth building for Black and/or Latina women. This session will highlight the best-kept secret in subsidized housing, the U.S. Department of Housing and Urban Development's Family Self-Sufficiency (FSS) program, a program available to families in certain types of federally subsidized housing.

Compass Working Capital (Compass) is a national nonprofit organization working to end asset poverty for families with low incomes and narrow the racial and gender wealth divides. Compass is working to expand the scope and impact of an asset-building model for the FSS program. The impacts of FSS are significant when the program is run well – on average graduating households in programs run by Compass build over $9,000 in savings while increasing their annual earned income by over $20,000, in addition to other gains in financial capability. Yet the program currently reaches less than 3% of the estimated 2.2 million eligible households nationally.

It is Compass' vision that one day the opportunity to build assets would be the norm, and not the exception, for families with low incomes—a reimagining of the social safety net as a system that fundamentally believes and invests in people to break the cycle of poverty and reach a stronger financial future. Session attendees will learn actionable strategies for incorporating a participant-led approach to financial coaching and program design that you can leverage in your own practice, and share promising policy efforts to expand access to FSS through an automatic enrollment, or "opt-out", approach to participation.

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Harnessing Dual Personas: Motivational Interviewing Techniques for Financial Coaching/Counseling in University Money Centers

Catherine Komen, Prince Bosompim, & Dr. Dottie Durband, Texas Tech University

Keywords: Behavioral finance, coaching and counseling competencies, financial behaviors

Target Audience

Financial educators, financial counselors, college students, and university money centers.

Learning Objectives

a. Participants will learn to recognize and apply the dual personality model during financial counseling using motivational interviewing techniques, focusing on facilitating behavioral change to help achieve financial objectives.
b. Participants will develop the necessary skills to navigate through factors influencing clients' self-control, considering the dual personality model and how to help clients manage their finances more effectively.
c. The poster will engage and learn from participants through questions and answers, as well as scenario reviews/discussions to promote active participation and learning.

Description of Content and Method

Are you able to identify the planner or the doer in your client? "How do financial practitioners deal with these dual personalities in their clients?" In contemporary financial counseling and coaching sessions, significant challenges arise from clients' diverse cognitive orientations within the dual structure preference model (Thaler & Shefrin, 1981). This complexity necessitates an approach that addresses varying financial goal aspirations, whether short or long-term, thereby impacting the effectiveness of coaching and counseling sessions at university money centers. The poster will attempt to address this challenge by providing a deeper understanding of dual personas, perceived self-control, and the dynamics of the coach-client relationship. We share valuable lessons from integrating motivational interviewing techniques, which lead to meaningful client engagement and goal realization. The poster will explore the dual personality model, the struggles of these personalities, and their effects on financial behaviors.

Relevance to Financial Counseling

Clients are often aware of the changes necessary to achieve their goals. However, without understanding the internal attributes that deter them from reaching their goals, the path to success remains elusive. The purpose of this poster is to share valuable insights and furnish financial practitioners with strategies (motivational interviewing) to discern the client's current orientation, whether they align more with the "planner" or "doer" archetype. Central to this, the poster will also explore the self-control component underpinning financial decision-making. The poster presentation seeks to bridge the gap between descriptive theory and practice among financial practitioners, thereby assisting, supporting, and guiding their clients in developing self-control behaviors leading to financial well-being.

Implications for Researchers to Help Further Improve the Program

Researchers could explore empirical studies using mixed methods to understand the client's rationalization and the why behind the dual personas through motivational interviewing techniques.

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What Every Financial Professional Should Know about F.I.R.E. (Financial Independence, Retire Early)

Jacqueline Koski, MSPFP, CFP®, AFC®, AFCPE Investment Task Force, Author F.I.R.E. for Dummies, Co-Host Catching Up to FI podcast, President-elect Financial Planning Association of Southwestern Ohio

Keywords: financial independence, financial planning, personal finance, retire early

Target Audience

The intended audience for this session is practitioners working with groups or individuals under the traditional retirement age of 60+ that are seeking to build wealth, reach financial independence, and may be considering early retirement. This would be helpful for coaches, counselors and educators that are:

- Working with individual clients
- Conducting group sessions (such as presentations, workshops, and trainings)
- Creating personal finance content (such as articles, blogs, social media, podcasts, and videos)

Objectives/Purpose

The purpose of this session is to explore the financial independence, retire early (F.I.R.E.) movement: the math, the mentality, and the myths. It will look at the pros and cons and help you gain a balanced understanding of what F.I.R.E. is and what it is not. This session will cover the common tenets of F.I.R.E. such as a high savings rate, purposeful spending, and low-cost investing. As a result, you will gain the knowledge you need to have more impactful conversations with clients and guide them in applying one or more of the elements of F.I.R.E. to their own financial journey, no matter where they are starting.

Description

The Financial Independence, Retire Early (F.I.R.E.) movement has inspired many to optimize their finances and reach financial independence sooner than they ever imagined. F.I.R.E. is essentially a journey of departing from the norm and de-coupling from the traditional work force years, or even decades, before the traditional age of 60+. This gives you the option to retire early, follow your dreams, have more control over your time or whatever it is you desire; all without depending on a paycheck from a job. Though F.I.R.E. is relatively new, the concept behind it is not. It follows the basic wealth building principles of *live on less than you earn and invest the difference*, except F.I.R.E. speeds up the process.

There has been growing interest in the F.I.R.E. movement in recent years and as a financial professional, you may have been asked about it. There are important nuances behind F.I.R.E. that every financial professional should know, and this session will equip you well enough to answer questions or explore this approach with your clients or audience.

You will learn about the different flavors of F.I.R.E. that make it flexible enough for just about anyone to pursue, including:

- *Coast*- Your nest egg is at a point where you do not need to make additional contributions, and the growth is enough to support your future retirement.
- *Lean*- Approaching F.I.R.E. on a lower income and smaller budget. Lower is relative but typically would fall under the average household income in your locale.
- *Fat*- Targeting a much higher number to live on now and in retirement. These would typically be high income earners with bigger budgets and higher levels of spending, saving, and investing.
- *Barista*- Having enough of a nest egg to trade in a high demand full-time job for a part-time or less stressful one (such as a barista). You still have income from the part time job (and possibly employer sponsored health insurance).

This session is led by the person that authored the book, F.I.R.E. for Dummies (Wiley, 2024), Jackie Cummings Koski.

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Empower Your Practice and Expertise: The Advantages of Mastering U.S. Visa Options for International Investors and Entrepreneurs

Catalina Laschon, Fintech Marketing, Author and Speaker for New Immigrants and Personal Finance &
Dana Bucin, Partner and Chair of Immigration Practice, Honorary Consul of Romania to Connecticut

Keywords: Visa Options, Immigration Strategies, Financial Counseling, Investment-Based Visas, Networking and Referrals, Entrepreneurship, DEI

Target Audience

Financial professionals; business owners; business and financial planning students. Financial professionals who are first-generation immigrants, interested in exploring their potential paths to entrepreneurship.

Objectives/Purpose

Teach financial professionals the various legal immigration paths available to international investors and entrepreneurs so as to inform their financial behaviors as they work towards their desired Visa type. The session aims to explore the motivations and attributes of international investors and entrepreneurs, while also providing personal finance professionals with an understanding of visa options available to this demographic. Additionally, it seeks to underscore the significance of integrating immigration considerations into financial counseling and offer practical strategies for counselors to enhance their practice or teaching strategies and serve their clients and students more effectively.

Description

Exploring the motivations and aspirations of international investors and entrepreneurs, we delve into their resilience, innovative thinking, and risk appetite. This type of client or student will be driven by a deep sense of accomplishment, grit and resilience, an enhanced capacity for out-of-the-box thinking, a willingness to try new approaches, and a higher than usual appetite for a high risk / high reward mindset and behaviors.

The session equips personal finance professionals with invaluable insights about a specific type of client profile. In addition to helping the United States economy by supporting and educating international investors and entrepreneurs, at a personal level, you can also have a substantial contribution to helping courageous and driven individuals to feel welcome and succeed here.

An important part of the session will be dedicated to explaining the various visa options available to international investors and entrepreneurs, such as investment-based visas based on bilateral investment treaties (E-1/ E-2), multinational managers and executives (L-1A)/EB-1A), H-1B for entrepreneurs, EB-5 investment program, O-1A/ EB-1A extraordinary ability in business, EB-2 National Interest Waiver, International Entrepreneur Parole Program and many others. It is critical that financial counselors have this background, as different legal paths will heavily influence their clients' approach to budgeting, saving, investing, and planning in general.

Finally, we will provide two persona examples to brainstorm about potential types of questions to ask and information to cover with the respective clients.

Advantages for financial counselors practice and workplace:

- Client Expansion: Attracts high-net-worth individuals and global business owners or have the opportunity to advise an aspiring entrepreneur and help them achieve success in time.
- Competitive Edge for your Practice: Sets apart with specialized guidance for clients.
- Networking: Expands referral networks and knowledge through professional connections.
- Improve Client Lifestyle Planning: Addressing lifestyle considerations such as relocation expenses, healthcare access, and education options for dependents.

Topics for Reflection:

1. Expand Knowledge of Visa Options
2. Understand Funding Sources for Visa Navigation
3. Assess Revenue Streams for Visa Types

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Empowering Financial Counselors to Facilitate Financial Independence Conversations with Diverse Populations

Catalina Laschon, Fintech Marketing, Author and Speaker for New Immigrants and Personal Finance

Keywords: Financial Independence, Cultural Sensitivity, Financial Autonomy, Diverse Populations, Optimizing Financial Outcomes, Overcoming Obstacles, Networking Opportunities, Cultural Competency, DEI

Target Audience

Personal finance professionals who want to assist diverse populations with their financial goals, with a focus on financial independence. Additionally, AFCs and AFC candidates in general, who are on their own path to financial independence and want to learn and share ideas with others like them.

Objectives/Purpose

In this session, you can discover how financial counselors can empower diverse populations to attain financial independence. We often focus on building the financial foundation with diverse populations. How about exploring the multifaceted concept of financial autonomy, moving beyond traditional definitions, to help students and clients reach their aspirations? Learn effective strategies for overcoming common hurdles on the journey to financial freedom. Gain insights into guiding individuals towards informed choices and optimizing their financial outcomes. Highlighting the significance of cultural sensitivity and tailored approaches, this discussion underscores the importance of understanding unique challenges within diverse communities. Join us for an insightful dialogue aimed at equipping financial counselors with the knowledge and tools to assist individuals from diverse backgrounds in achieving their financial goals.

Description

Financial independence is a vital aspiration for new immigrants, representing the shift from relying on a job out of necessity to having the freedom to make personal choices. Achieving this goal requires tailored strategies that consider the unique cultural contexts and challenges faced by immigrants. This session aims to equip financial counselors with practical approaches to support new immigrants in their journey toward financial independence, going beyond traditional methods.

Key topics include:

1. **Defining Financial Independence**: Shifting from necessity to choice, addressing biases and inequities.
2. **Overcoming Obstacles**: Identifying and addressing common challenges faced by new immigrants.
3. **Decision-Making**: Navigating complex financial decisions in a new environment.
4. **Saving and Investing**: Practical advice on budgeting, saving, and increasing revenue starting with the first year post-relocation.
5. **Networking and AFC Value**: Encouraging a shift in mindset and expanding conversations to better support new immigrants.

Topics for Reflection

Redefining Financial Independence: Explore the broader implications of financial autonomy and its impact on personal fulfillment and decision-making.

Overcoming Common Challenges: Identify and address obstacles like tax issues, decision fatigue, and investment risks with practical strategies.

Cultural Competency in Financial Counseling: Enhance skills in guiding diverse populations by understanding cultural nuances and tailoring approaches for effective and inclusive support.

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Mastering Public Speaking for Personal Finance Professionals

Catalina Laschon, Fintech Marketing, Author and Speaker for New Immigrants and Personal Finance

Keywords: Public Speaking, Presentation Skills, Audience Engagement, Communication Techniques, DEI

Target Audience

This session is tailored for personal finance professionals who want to refine their public speaking skills to engage diverse audiences effectively.

Objectives/Purpose

The goal of this session is to equip personal finance professionals with practical techniques to enhance their public speaking abilities. By the end of the session, participants will have a deeper understanding of how to reduce anxiety, tailor their message to their audience, and deliver impactful presentations with confidence.

Description

This session will guide you through essential strategies for managing and utilizing nervousness effectively, helping you understand and control the physiological responses associated with public speaking anxiety. You'll practice techniques to reduce nervousness through thorough preparation and rehearsal, ensuring you can speak with clarity and confidence.

We will take an audience-centric approach, teaching you how to tailor your message to meet the specific needs and interests of your audience. You'll learn the importance of audience analysis, discover how to adapt your content, and explore techniques to engage and connect with diverse groups.

Effective organization of your speech will be another key focus. You'll understand how to structure your presentation for maximum impact, craft compelling openings, and apply various organizational patterns to enhance your effectiveness. Additionally, we'll cover how to gauge audience reactions and adjust your message accordingly, the importance of authenticity and connection, and how to use visual aids effectively. This session is your opportunity to refine your public speaking abilities, making you a more compelling and influential communicator in the realm of personal finance.

Topics for Reflection

Enhance Communication Skills. Master techniques to clearly and effectively convey complex financial information tailored for financial counselors.

Build Confidence. Acquire strategies to overcome public speaking anxiety and deliver presentations with confidence, fostering trust and credibility.

Engage Audiences. Learn methods to captivate and engage diverse audiences, ensuring your messages resonate and make a lasting impact.

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Becoming a More Effective Ally to Individuals at Risk for or Living with Acquired Disabilities

Jennifer Mawson, MS, AFC Candidate, AFCPE DEI Taskforce Member, My POTSie Coach, LLC

Keywords: DEI; acquired disability; financial empowerment; financial resilience; low-income consumers

Target Audience

The intended audience for this presentation is AFCPE Symposium participants interested in assisting those at risk for or who are already financially affected by acquired disabilities.

Objectives/Purpose

The objectives of this session are to help financial professionals:

1. Recognize the specific financial challenges posed by acquired disabilities.
2. Promote financial resilience among clients in light of the risk and eventuality of acquired disabilities.
3. Gain a foundational understanding of key financial safety-net systems used by the disability community, as a first step to integrating an "acquired disability perspective" into professional development.

Description

This session will better equip AFCPE Symposium participants to work with clients at risk for or already living with acquired disabilities, by increasing their understanding of the financial issues this largely underserved population is facing and the complex safety-net systems they must work within to reach or regain financial well-being and independence. Participants will explore current trends and statistics, and receive tips to help clients strengthen their financial resilience. A case study is included to highlight the complexities of these safety-net systems and to help participants generate practical solutions within their work. Additional resources will be provided to support ongoing professional development.

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Promoting Substance Use Recovery through Financial Education

Kelly May & Nichole Huff, University of Kentucky

Keywords: financial capability; health and financial issues; recovery from financial shock

Target Audience

The target audience for this presentation includes financial practitioners, financial counselors, educators, substance use treatment professionals, healthcare professionals, and students. This session presents a critical opportunity for professionals to increase their financial capability, especially as it relates to substance use disorder (SUD) and recovery audiences. This session will highlight a new online professional development training that improves communication-related skills such as reducing SUD-related stigma and building cultural competency, as well as providing access to the financial literacy curriculum, *Recovering Your Finances (RYF)*, written with recovery audiences in mind.

Objectives/Purpose

This *Putting It into Practice* session will showcase the Kentucky Cooperative Extension program, *PROFIT: Promoting Recovery Online through Financial Instruction & Addiction Training*. PROFIT is an asynchronous online training designed to increase professional capacity on SUD reoccurrence and financial stress. Those trained in PROFIT will be better equipped to help clients build recovery capital as they reduce financial stress. As financial professionals, is vital to effectively communicate with and offer support to vulnerable populations, including those in substance use recovery.

The session will: (1) overview PROFIT and RYF; (2) detail program impacts and implications for professionals; and (3) discuss how attendees can enroll in PROFIT at no cost thanks to a USDA-NIFA Rural Health Safety Education award. Professionals who go on to complete PROFIT will receive access to the RYF financial literacy curriculum geared toward clients in recovery.

Description

PROFIT is a two-hour online training is designed to increase the capacity of professionals on factors that mitigate SUD reoccurrence, particularly financial stress. Aligning with Extension's National Framework for Health Equity and Well-Being, PROFIT recognizes the complex, bidirectional relationship between individuals and their environment, and the dynamic interplay among overlapping social contexts to explain risky behavior. PROFIT leverages research-based Extension education to address the overdose epidemic by providing professional development.

PROFIT includes three self-paced sections featuring programs developed by Kentucky Cooperative Extension: (1) *Addiction 101* is designed to reduce the stigma often associated with addiction, as well as foster a sense of comfortability in working with addicted/recovering audiences; (2) *Recovering Your Finances* is an eight-session, comprehensive financial education curriculum for individuals in SUD recovery; and (3) *Rural & Cultural Competency Building* is designed to increase professional understanding of cultural differences and offer considerations for working with rural communities.

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Robo-advisors & Financial Counseling

Taylor Nelsen

Keywords: automation, decision-making, digital tools, investing, robo-advisors

Target Audience

Financial professionals seeking to deepen their understanding of robo-advisors and their implications for financial counseling will get the most out of this presentation. Individuals who wish to make decisions about using a robo-advisor will also learn valuable information.

Objectives/Purpose

The primary goal of this session is to equip financial counselors with the knowledge to educate clients on the decision to use a robo-advisor and how to navigate these financial tools. Walk away knowing who robo-advisors are the right choice for, what factors to consider when choosing a robo-advisor, and common counseling opportunities involving robo-advisors.

Description

Financial professionals are responsible for keeping up with emerging trends and technologies. Robo-advisors are expected to reach over 21 million users by 2027, with assets under management growing by 31.3% in 2024 (Statista Market Insights, 2024). With their growing prevalence, it is crucial to be able to answer questions, educate clients, and empower them to use these technologies responsibly.

Robo-advisors have two main functions: 1) build and 2) manage an individual's investment portfolio. They do both through digital tools and algorithms that users can access without input from a financial professional. At their best, these are powerful digital tools that engage individuals, disseminate information, and use behavioral finance techniques to nudge users to make decisions aligned with best practices. They simplify investment management and make functionality usually only available through a costly wealth manager accessible to all. Unfortunately, not all robo-advisors are created equal. At their worst, they oversell their capability in their marketing. They push users towards expensive, risky, and complicated investments for reasons often conflicting with the individual's best interest (Arnott et al., 2023).

Navigating the evolving marketplace of robo-advisors requires understanding both core investment best practices (low fees, diversification, rebalancing, asset allocation/re-allocation, fiduciary standard, tax-advantaged accounts, etc.) and robo-advisor-specific features (automatic re-balancing and tax loss harvesting, account aggregation and coordination, etc.). Applying these concepts to an individual's complex financial situation is often beyond the scope of the robo-advisor itself (Fan & Chatterjee, 2020). Financial counselors can provide essential investment education that enables clients to make wise investing choices for themselves. They can also ask more personalized and nuanced questions to help clients understand how robo-advisors might fit into their larger financial lives.

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Humanizing Finance: Identifying and Harnessing Emotional Power in Financial Decisions to Build Stronger Client Connections and Healthier Financial Outcomes

Deanna O'Neal, AFC®

Introduction

Imagine, you are a 10 year who comes home from school to an empty house like normal, but today you try to turn on the TV and nothing happens. You go to a light switch, flick it up and down several times, but nothing happens. It seems the power is out. You think back to your walk home from school; no storms. Nothing out of the ordinary that would cause this. You figure it must be that your mom didn't pay the electric bill… AGAIN.

Imagine, you are 14. As you walk out your front door, you see a notice posted on the outside. It reads "72-hour eviction notice". With a deep sigh and a heavy heart, you head to the school bus knowing that tonight you get to pack up everything again while your mom tries to find another place she can afford.

Sitting Down with the Client

We've all had that client, the one who we've given the same advice to over and over again and yet, they still aren't following it. You know the one, when you show him the way he can work towards paying down his debt and start saving and all he needs to do is stop eating out so much. Then we you see him again, he is still overspending and not paying more than his minimum payments and not saving anything. You wonder, why is this so hard for him? It's such an easy concept.

Or that client who sat down with you to create at an amazing retirement plan based on what she has put aside throughout her life and how she can earn more while living on it in retirement. When you do her next financial review, she tells you she withdrew everything after you showed her just how much she had and moved it to her bank account because she is terrified of losing any of it.

Negative Emotions Tied to Money

Let's talk about those frustrating clients and those "poor" decisions they make regarding their finances. (Ask for examples.) Fear, Guilt/Shame, Anxiety, Jealousy, Pride

Recognizing and managing emotional biases in both clients and advisors is essential for making informed financial decisions.

Positive Emotions Tied to Money

Joy, Love, Satisfaction, Security, Freedom

Cultivating a client-centric approach, where the focus is on understanding clients' values, goals, and emotions, leads to better outcomes.

The Conscious and Unconscious Mindset of Money and How it Impacts Decision-Making

Though it can be hard to imagine, our kids' money patterns and habits are largely established by elementary school. Yes, by about second grade or age 7, when we're still packing their school lunches and watching cartoons with them, our children have formed many of the thought processes that will impact their financial capabilities later in life as adults

Emotional biases include loss aversion, overconfidence, self-control, status quo, endowment, and regret aversion.

Information-processing biases result in information being processed and used illogically or irrationally.

Information-processing biases include anchoring and adjustment, mental accounting, framing, and availability.

Fostering Rapport and Trust

Rapport is all about establishing a sense of mutual trust and understanding. It involves finding common ground with others and creating a comfortable space for conversation.

By showing genuine interest in what someone has to say, actively listening to their thoughts and feelings, we demonstrate our commitment to building rapport. Trust goes hand in hand with rapport but takes it a step further. Trust is built over time through consistent actions and reliable communication.

Communicating with Compassion

What would this look like to you? (Discussion)

Overcoming Emotional Barriers

Emotions such as fear, pride, and overconfidence can significantly hinder individuals from reaching financial stability and prosperity. These emotional barriers can lead to procrastination, excessive risk-taking, or the inability to save and invest wisely.

Empowering Clients Through Emotional Understanding

Emotional empowerment

A set of skills that help people identify, express, and regulate their emotions. It can also include the ability to cope with both positive and negative emotions.

Emotional understanding

A key aspect of emotional intelligence (EI) that involves understanding how people feel, the causes and consequences of emotions, and how emotions transition.

Resilience in Uncertain Times

Financial resilience is defined as the ability to withstand life events that impact your income. This might be a job loss, a reduction in income, or a major household or lifestyle expense.[4]

Instead of just focusing on the normal financial ideas like have a plan, create emergency savings, etc., we need to also look at the emotions that tie into the uncertain events and address the stress that will come along. Teaching our clients to be aware of the emotional impact is just as important as focusing on the habits of financial planning.

Personalizing Financial Advice

Each client we work with comes from a unique background and has experienced life through their unique lens. When we take that into account, we can truly create a customize way of looking their financial situation.

Money After 70

Barbara O'Neill, Ph.D., CFP®, AFC®, Money Talk: Financial Planning Seminars and Publications

Keywords: financial planning, older adults, personal finance, retirement planning, septuagenarians

Target Audience

The target audience for the program that is described in the presentation is older adults. The target audience for the AFCPE Symposium session is practitioners who are older adults and those who provide financial education and counseling for older clients or have parents who are older adults; i.e., probably everyone attending the Symposium.

Objectives/Purpose

1. Attendees will learn about 20 lifestyle and financial planning issues that affect adults age 70+.
2. Attendees will better understand lifestyle transitions that occur from "go-go" to "slow-go" years.
3. Attendees will utilize the information in their personal financial planning and/or with clients.

Description

There are two decades in life where most people experience the greatest amount of change from the start of a decade to the end. The first is their 20s as young adults turn 20 often dependent on parents and building human capital. By the time they are 29, many have launched careers and started families. Similarly, older adults experience many life transitions between age 70 and 79, including changes in health, income, marital status, housing, and income taxes. In addition, workers age 75+ are the fastest growing segment of the U.S. labor force, percentage-wise, according to the Bureau of Labor Statistics and Pew Research. More older adults are working today out of necessity or by choice.

The purpose of this session is to increase the capacity of AFCPE Symposium attendees to serve the financial education/planning/counseling/coaching needs of clients age 70+ and to identify topics for future research related to older adults. It will provide a "lens" for future work by providing insights into the mindset and decision-making processes of older adults (e.g., achievement of "bucket list" goals before it is "too late" and considering purchases in relation to personal life expectancy). AFCPE members' capacity to help clients is strengthened when practitioners share information and educational resources with each other. There are relatively few programs that focus primarily on financial topics of concern to people age 70+, so this presentation can help fill this void.

This session will present abbreviated content from a 90-minute class for older adults called *Money After 70*. At the conclusion of the session, *Money After 70* program evaluation results will be shared. Some AFCPE members are in their 70s (or will be soon), so this presentation will come at a "teachable moment" for future spending decisions, income taxes, and philanthropy. Younger Symposium attendees can use the information to help older clients and/or their parents navigate aging-related issues. Program materials will be made available to Symposium participants.

The presentation will begin with several questions to the audience: "How many of you have clients (parents) who are age 70+?" and "What financial topics do you think are of most concern to people age 70+?" This will be followed by a brief discussion of demographic trends.

The remainder of the session will briefly describe 20 specific financial planning topics that affect septuagenarians and those who are older: 1. Social Security, 2. Required minimum distributions (RMDs), 3. "Young Old" Mindset in early 70s, 4. Transition from "go-go" to "slow go" (and eventually "no go") years, 5. New first-time expenses (e.g., hearing aids, dentures, home health care), 6. "Lasts" (i.e., doing or buying things for the last time), 7. Spending down assets, 8. Simplification and downsizing, 9. New housing considerations, 10. Increased risk of diminished capacity, 11. Investment portfolio longevity and shortened investment time horizon, 12. Income taxes, 13. Legacy planning and charitable gifting, 14. Qualified charitable distributions (QCDs), 15. Final Financial "Gap Years" (i.e., age 70 to 73 or 75, depending on year of birth), 16. Serious long-term care planning, 17. Communication about "hard topics" (e.g., burial wishes and estate plans), 18. Widowhood and solo aging, 19. Credit score decreases (based on credit scoring model algorithms), and 20. Insurance premium increases (e.g., auto, umbrella).

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Spring Cleaning Financial Planning Strategies for Clients

Barbara O'Neill, Ph.D., CFP®, AFC®, Money Talk: Financial Planning Seminars and Publications

Keywords: financial planning, financial record-keeping, personal finance, retirement planning, spring cleaning

Target Audience

The target audience for the program described in the presentation was older adults. However, most of content is multi-generational and, therefore, of interest to adult learners of all ages. The target audience for the AFCPE Symposium session is practitioners who are looking for a program to replicate in their community to motivate clients/students to undertake occasional time-intensive financial management activities. Program materials will be made available to session attendees through the Symposium platform.

Objectives/Purpose

4. Attendees will learn about the concept of "Financial Spring Cleaning."
5. Attendees will learn about 25 different "Financial Spring Cleaning" strategies.
6. Attendees utilize the information in their personal financial planning and/or with clients.

Description

Research has found that financial management practices requiring a chunk of time for planning (e.g., written financial SMART goals and budgeting), calculations (e.g., net worth and cash flow statements), and document reviews (e.g., beneficiary designations and checking a credit report) are performed less frequently than practices that are more routine and performed on an ongoing basis (e.g., reviewing checking account balance and bill-paying). Thus, a challenge exists for financial practitioners to encourage clients or students to perform occasional, but very important, financial management activities that require a time commitment.

What to do? One way to frame this discussion with clients is to use the term "Financial Spring Cleaning." Spring cleaning is the practice of thoroughly cleaning a house in Springtime. The term is also used metaphorically for any kind of heavy-duty organizing activity. Financial spring cleaning is the practice of thoroughly reviewing key aspects of personal finance and completing occasional financial management tasks in the Spring months. Why Springtime? 1. Income tax calculations are fresh in people's mind, 2. Financial records from tax season are readily available, and 3. Weather is still cold in much of the U.S. in early Spring to do things outdoors (i.e., fewer distractions).

This session will present abbreviated content from a 90-minute class titled *25 Ways to "Spring Clean" Your Finances*. The purpose of this session is to increase the capacity of AFCPE Symposium attendees to serve the financial education/planning/counseling/coaching needs of their clients by learning about financial management strategies that should be performed at least annually. Evaluation results from the *25 Ways to "Spring Clean" Your Finances* program will also be shared. While there are many social media and blog posts every year about "Spring Cleaning Finances" on the first day of Spring, there are no curricula on this topic that the presenter is aware of. This presentation will fill this void and provide session attendees with a toolkit of financial tasks to share with clients.

The presentation will begin with questions to the audience about their spring cleaning and financial spring cleaning practices followed by a brief discussion of research about the performance of financial management practices and the Spring Cleaning and Financial Spring Cleaning concepts. This will be followed by a description of 25 specific occasional financial management activities: 1. Asset allocation inventory, 2. Automatic payments inventory, 3. Beneficiary designations review, 4. Charitable gifting plan, 5. Credit card inventory, 6. Credit report and score check, 7. Debt repayment acceleration plan, 8. Digital assets inventory, 9. Estate planning document review, 10. Financial account consolidation, 11. Financial goals update, 12. Financial inventory form, 13. Home improvement inventory, 14. Income tax review, 15. Insurance coverage and cost review, 16. Negotiation for prices and interest rates, 17. Net worth calculation, 18. Organizing financial documents, 19. Personal property inventory, 20. Purging and shredding documents with sensitive personal data, 21. Reward and gift card review, 22. Required minimum distribution withdrawal planning, 23. “Rule of Three” comparisons for “big ticket” purchases, 24. Spending plan (budget) review and expense tracking, and 25. Two-factor authentication for online financial and shopping accounts.

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Financial Therapy Referral Process: Helping Financial Professionals (Educators, Coaches, and Counselors) Identify and Refer Clients to Financial Therapists

Brendan Pheasant & Sonya Lutter, Texas Tech University

Keywords: financial therapy, financial therapy referral process, ideal self, stages of change, transtheoretical model of change

Target Audience

The primary audiences are financial coaches, counselors, and planners, although the concepts could also be valuable to financial educators.

Objective/Purpose

After this session, attendees will understand why, when, and how to refer a financial therapist using the financial therapy referral process. This will be achieved with the following takeaways:

- Help attendees understand the benefits for themselves and their clients when referring a financial therapist.
- Learning to use the FTRP statements to create space for clients to disclose challenges.
- Learning to identify challenges that may warrant a referral to a financial therapist.
- Learning to discuss the client's challenges in the context of the financial professional's services.

Description

Many financial professionals are reluctant to refer financial therapists because they fear upsetting their clients or discussing matters outside their area of expertise. The Financial Therapy Referral Process (FTRP) helps address these real-world challenges with a simple solution that integrates into the financial professional's onboarding process.

This session lays a framework for the FTRP to help financial professionals understand why, when, and how they should refer to financial therapists. The why is about uncovering reasons the financial professional might desire to refer the financial therapist, such as improving client outcomes or retention. The when is about recognizing the conditions under which a referral to a financial therapist may be beneficial. The how is about the tools the financial professional will need in practice to uncover the potential obstacles and make the referral to the financial therapist. The tools are the four FTRP statements, which give space for clients to reveal potential obstacles, and the referral conversation which focuses on the financial professional's services.

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Closing the Wealth Gap: Empowering Black Women to Overcome Financial Fraudulence Syndrome™ for Financial Success

Kiameshea Prewitt, AFC ®, CCRS™, FBS®, Tower Above Financial Solutions, LLC

Keywords: Women, Financial Fraudulence Syndrome, Wealth Gap, Financial Competence, Unworthiness

Target Audience

Financial professionals who want to understand the internal conflict their Black women clients may be experiencing around wealth.

Objective/Purpose

This presentation aims to provide insights into why many Black women accept less than they deserve in terms of pay, exploring the phenomenon of Financial Fraudulence Syndrome™. By addressing the internal conflicts Black women face around wealth, seeking to empower financial professionals to better support their clients and contribute to closing the wealth gap.

Description

After nine years of one-on-one financial coaching, I noticed a pattern emerged: many women, especially black women with a Christian upbringing, struggle with financial confidence. They feel unworthy and fear mismanaging wealth, influenced by societal biases and false biblical teachings. This presentation explores how Financial Fraudulence Syndrome™ (FFS) contributes to the pay disparity among Black women. Through the lens of the Self-Determination Theory, we examine autonomy, competence, and relatedness, offering strategies to empower women in navigating financial decisions.

Impact/Value to the Field

By understanding and addressing Financial Fraudulence Syndrome™, financial professionals can better support women, particularly Black women, in building financial confidence and autonomy. This presentation provides practical strategies and resources for empowering women to take control of their financial futures.

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Pathways To Profit: How To Incorporate Coaching, Contracts & Consulting Into Your Financial Coaching Business

Dominique' Reese AFC®, FFC®, AFCPE Investment Task Force Chair, CEO Reese Financial Services, President Black Women's Investment Club, Creator Master My Money® Personal Finance System

Keywords: practice management, financial coaching business, entrepreneurship, contracting

Target Audience

This session is for financial educators, coaches and counselors in private practice and/or exploring private practice.

Objective/Purpose

The objective of Pathways to Profit is to equip financial educators, counselors, and coaches with the knowledge and strategies necessary to enhance their businesses. By exploring the incorporation of coaching, contracts, and consulting into their practices, the session aims to empower practitioners to diversify their services, increase their revenue streams, and ultimately thrive as independent entrepreneurs in the financial coaching and counseling industry.

Description

In this session, attendees will be introduced to three income-generating business models they can incorporate into their private practice. By exploring these pathways, practitioners will be exposed to a diverse selection of business models they can explore to build their financial coaching business. Understanding how to incorporate coaching, contracts, and consulting effectively can contribute to the financial sustainability of individual practitioners and the broader industry.

After this session, attendees will know three distinct pathways they can pursue in their private practice in order to enhance their service offerings, increase their income generation and become a sustainable and thriving business in the industry.

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Trends in Financial Counseling/Coaching: First Annual Survey Results

Amelie Riendl, Financial Coaches Network (FCN), Mil Money Coach & Joshua Escalante Troesh, FCN

Keywords: career, employment, income, pricing, programs

Target Audience

Financial coaches and counselors who are interested in industry trends.

Objectives/Purpose

The purpose of this session is to help financial counselors/coaches learn about other professionals in this undefined career field. Learning what other counselors/coaches are doing can help new and experienced counselors improve their efficiency and effectiveness.

Description

Have you ever wanted to benchmark yourself against other financial counselors/coaches in our emerging industry?

FCN's Annual State of Financial Counseling/Coaching Survey analyzes benchmarks and best practices in the industry. The profession of financial counseling or coaching has a lot of flexibility when working with clients. This variability leads to a lot of confusion for new and experienced coaches/counselors as they navigate their personal careers.

This presentation will share the results of the first 'State of Financial Counseling/Coaching' survey conducted in early 2024. This survey will provide coaches/counselors at all skill levels with a better understanding of the landscape of the industry, options for their careers, and the choices other coaches/counselors have made.

The survey included trends in data covering:

- Salary and Income
- Trainings and Certifications
- Business / Career Setup
- Working with Clients
- Coaching/Counseling Programs
- Business Goals
- Business Profitability and Expenses
- Technology

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Utilizing Advances in Technology to Improve Client Outcomes and Coach Efficiency

Amelie Riendl, Mil Money Coach, Financial Coaches Network

Keywords: automation, efficiency, fintech, technology

Target Audience

Financial coaches and counselors who are interested in utilizing technology to improve their efficiency and effectiveness with their clients.

Objectives/Purpose

Many financial coaches don't have sufficient visibility into their client's finances. This presentation will share how counselors can improve their relationship with clients using automated accountability checkpoints and create more impactful results by automating the more tedious part of financial management.

Description

The presentation will demonstrate how technology can help improve our effectiveness, including a live demonstration in multiple software solutions.

Goals

Technology can help monitor progress towards goals by automatically updating the balance and provide a progress visualization. Automated communications can notify a client if a goal is off track and action is needed.

Cash Flow

Software solutions use rules for automatic transaction categorization based on a client's account setup and spending habits. When done well, 90% (or more) of new transactions are automatically categorized, so clients aren't overwhelmed with this task. If a client wants help, some technologies allow coaches to help with managing cash flow.

Net Worth

Providing a single location where clients can view all their assets and liabilities is another benefit. By linking most of a client's accounts, technology can automatically track this over time to show how their overall financial health improves over time.

Spending Plans

Technology allows us to spend less time on the tedious part of tracking transactions and frees up time to focus on results. A software can automatically calculate a recommended spending plan based on past behaviors or show spending trends to identify potential future spending updates.

Reports Access

Access to reports by counselors allows them to be more effective at communicating progress and helps prepare for counseling sessions. Counselors can send a customized report to the client, share one during a counseling session to aid the discussion, or walk them through an 'end of month' review.

Automated Communications

Automated weekly reports on key categories can help clients make decisions and adjustments to spending. Monthly/quarterly reports can serve as a reminder to review trends such as net worth and spending. Automatic emails to clients for nudges reduce the need for monitoring, and alerts identify potential issues as soon as they occur.

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Bridging the Divide: Empowering Financial Counselors to Serve High-Income Clients

Rahkim Sabree, AFC®, R&A Consulting

Keywords: clients, financial counseling, financial psychology, financial therapy, high income

Target Audience

Financial educators, financial counselors

Objectives/Purpose

In an evolving financial landscape, the needs of clients across income spectrums are becoming increasingly complex. Traditionally, financial counselors have focused their efforts on supporting low-to-middle-income individuals, often directing high-income clients toward financial planners. This presentation seeks to illuminate the unique challenges faced by high-income individuals and the untapped opportunity for financial counselors to offer valuable guidance. The primary goal of this session is to challenge and expand the traditional scope of financial counseling by: a) demonstrating the unique financial and emotional challenges high-income clients face. b) illustrating the importance of financial counselors in filling the current service gap for high-income individuals. c) providing actionable strategies for financial counselors to effectively engage and support high-income clients.

Description

This presentation aims to shift the traditional focus of financial counseling from primarily serving low-to-middle-income clients to embracing the nuanced challenges of high-income individuals. Despite their financial capabilities, high-income clients face unique obstacles in finding trusted professionals who understand their specific needs. This talk will demonstrate the necessity for financial counselors to expand their services to this demographic, ensuring a holistic approach to financial wellness that transcends income brackets. This session is tailored for financial counselors with existing experience or knowledge in financial education, counseling styles, and client interaction. Attendees should have a foundational understanding of financial counseling principles and be familiar with diverse client backgrounds. The session aims to build on this knowledge by focusing on the behaviors, personal psychology, and the broad range of options available to high-income clients, along with their unique spending preferences and challenges.

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Healthy Eating on $6/Day: Rethinking Food Access and Affordability

Carol A. Smathers, MS, MPH, Ohio State University Extension

Keywords: family finance; food access, food affordability, food budget, Thrifty Food Plan

Target Audience

Food affordability is relevant to a wide audience because most people purchase food for themselves and others. Many individuals' concepts of food affordability are largely shaped by misperceptions, subjective interpretations, and incomplete information. This topic may be especially helpful for those who work with low-income audiences.

Objectives/Purpose

The objectives of this session are to form more accurate perceptions of the relative costs of healthy vs. unhealthy foods and to identify types of guidance that can help people with limited grocery budgets access nutritious foods. Additionally, increasing awareness of and knowledge about the Supplemental Nutrition Assistance Program (SNAP) may help to increase empathy and/or decrease stigma towards individuals experiencing poverty (Harding, 2015).

Description

Perceptions that Healthy Foods are Too Expensive

According to the latest available data from the USDA, U.S. consumers spent more than 11% of their disposable income on groceries and restaurants in 2022 (Economic Research Service, 2024a). That means that Americans were spending more of their income on food than they had in 30 years. Despite the portion of their incomes spent on food, most Americans do not consume the recommended daily amounts of fruits and vegetables (Lee, Moore, Park, Harris, & Blanck, 2019). Perceptions that fruits and vegetables are too expensive and that they are more expensive than foods high in sugar, fat, and salt, are pervasive (Cleveland Clinic, 2023). The notion that low-income individuals lack healthy food, eat a lot of fast food, and experience obesity *because healthy food is too expensive* exists among public health staff, dietitians, health care providers, and other professionals. The perceived prohibitively high cost of healthy foods can be particularly concerning and detrimental to lower income households (van der Velde, et al, 2019). Further, studies that claim healthy foods like fruits and vegetables cost more than other foods may use price per calorie as the basis for comparison. However, when using other factors, such as price per average amount consumed, fruits and vegetables are typically less expensive than less healthy foods (Carlson and Frazão, 2012).

Rethinking Food Affordability

Terms such as "food insecurity", "food access", "affordability", "healthy" and "expensive" have numerous interpretations. The United States Department of Agriculture's (USDA) food security continuum, USDA's MyPlate standard for healthy meals, and cost per serving comparisons provide objective contexts when using such terms. The Thrifty Food Plan (TFP) is one of four USDA food plans that estimate the cost of a nutritious diet across various price points using national data sets. The TFP is designed to meet nutritional needs (by gender and age) through consuming a healthy, cost-conscious diet at home and is used as the basis for SNAP food assistance allotments (Food and Nutrition Service, 2023a). According to the most recent USDA cost of food estimates, consuming a healthy diet within TFP spending levels is achievable at approximately $2.69 per meal per person, based on the reference family of four (Food and Nutrition Service, 2024). The author's related experience includes eating healthy foods on a low household grocery budget of $1.50/meal/person between 2018-2022 and $2/meal/person since January 2023 in Columbus, Ohio (Ohio State University, 2023). This experience is documented through receipts from every purchase, photos of meals, and descriptions of tracking per meal costs. The potential for purchasing healthy foods for an average of $2 per meal can be better understood by considering actual current per serving costs for common foods, typical items purchased, typical meals created, and factors that make meal preparation possible. At-home meals should remain affordable, as food prices are expected to decelerate throughout 2024 compared to recent years. According to the Consumer Price Index, grocery store purchases increased just 0.3 percent from June 2024 to July 2024 (Economic Research Service, 2024b). Finally, it is important to reflect on known barriers to healthy eating other than the cost of food, effective strategies for affording food on a low budget, and common guidance for saving money that is often *not effective* for cutting overall grocery costs in order to provide relevant advice that can help address real challenges (Ohio State University, 2023; Food and Nutrition Service, 2023b).

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100m Dash, 800m Hurdle, or a Marathon: Clarifying Your Goals & The Action Steps to Form Supportive Mentoring Relationships

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Keywords: Goal clarification, Mentorship, Professional development

Target Audience

Financial professionals (Beginner to Advanced), Students

Objective/Purpose

Mentorship matters! In this session we will work with you to jumpstart professional goal clarification, discuss best practices for seeking and maintaining a supportive mentoring relationship, and brainstorm next action steps. Participants will leave the session with a worksheet that serves as a start on (a) clarified professional goals, (b) strategies to seek supportive professionals for a short or long-term mentoring relationship, and (c) proactive solutions when faced with barriers or challenges.

Description

Mentorship may be a trending buzzword, but the power of learning from and connecting with others is as old as humanity. Mentoring relationships can be helpful in moving forward professionally, expanding networks, or changing careers. Financial professionals, at all career stages, are curious and tend to constantly seek professional development and personal growth. Mentorship is an under-utilized benefit across professions and career stages. Mentorship is beneficial for those who are experts in their field, as well as for the person dipping their first toe into the field.

The session will have two parts: A short goal-clarifying workshop, with the majority of the presentation focusing on strategies and best practices to seek and maintain mentoring relationships.

Part I: A brief, guided visualization session will elicit new goals and renew interest in existing goals. Goals will be categorized: Sprints (100m dashes) are small, short & easy; Complex (800m hurdles) can be completed within a year; and Marathons require a longer timeframe and potentially the most action steps.

Part II: With goals clarified, the three presenters will share strategies to seek informal and formal mentoring relationships for each type of goal, as well as best practices for maintaining professional relationships. Brainstorming for a mentoring relationship will start with possible small, immediate steps through research for an appropriate mentor, possibly by asking others for introductions. The last guided activity will address potential opportunities, challenges, and ideas to minimize obstacles.

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Putting it into Practice: Improving Financial Literacy Education Using the Flywheel Effect!

Jacob Tenney, Ph.D., CFP® University of Charleston

Keywords: financial literacy, flywheel, compound interest, financial preparation

Target Audience

This presentation is directed to financial literacy educators and counselors who are trying to help individuals and families make appropriate financial decisions toward reaching their financial and life goals.

Purpose

The purpose of this presentation is to provide some recommendations to connect better with students and clients by using the concept of a flywheel and its application to various financial literacy topics. The hope is students and clients will connect with and remember the idea of a flywheel and that it will motivate better financial choices.

Description

Incoming college students surveyed over two years demonstrated a lack of understanding about compound interest and its potential impacts on savings, investments, and loans. To address this issue students not only need to be taught about compound interest, but they need to have some way to help them understand the significance of compound interest and to remember the impact of compound interest when they are faced with financial decisions throughout life. This presentation adapts the idea of the "flywheel effect" from Jim Collin's book *Good to Great* to emphasize the power of starting early to save and invest. The flywheel effect suggests that some effort upfront and along the way can pay off in the long run. It might take some effort to get a flywheel going but then it will continue the forward momentum for a long distance. This presentation outlines an attempt to motivate students to act using the idea of the flywheel effect. The flywheel effect is introduced through examples and then it is applied to the concept of compound interest in saving and investments as well as various other aspects of personal finance including spending plans (budgets), emergency funds, insurance products, lending scenarios, and estate planning. As a next step a follow-up survey needs to be developed to measure whether students better understand financial literacy concepts such as compound interest and whether introducing the flywheel effect was helpful in the financial literacy education process.

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The Road to Private Practice: 9 Keys to Successfully Starting a Financial Coaching Business

Joshua Escalante Troesh CFP®, MBA & Emily Blain, Financial Coaches Network

Keywords: niche, private practice, small business

Target Audience

Financial coaches and counselors who are interested in starting their own private practice OR who have started their own private practice and are looking for ways to be more successful.

Objectives/Purpose

Our goal is to help aspiring/new private practice financial coaches avoid the biggest and most common pitfalls of being a new business owner. They will also walk away with an understanding of some of the key things to focus on as a new business owner.

Description

Private practice financial coaches or counselors can make a huge impact on people's lives, but only if their businesses are successful. This presentation will share 9 key steps around getting clients, working with clients, and running your business. If we are ultimately going to serve the millions of people who need financial help, more coaches and counselors will need to build financially successful private practices to meet that demand.

The 9 points we'll be discussing are:

1. The Minimally Viable Business
2. 5 reasons businesses fail
3. Common traps to avoid
4. The importance of focusing on a niche
5. How to run the business like a business
6. How to get clients in the short-term
7. Building a defined process for working with clients
8. Differences between business budgets and personal budgets
9. A roadmap for a successful business launch

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Helping the World Fall in Love with Budgeting: A FinTech Initiative to Reduce Barriers to Budget Coaching

Zach Whelchel, MyBudgetCoach

Keywords: budgeting, personal finance, accessible, coaching, budget coaching

Target Audience
Anyone who encourages their clients to live by a budget. Groups that may find this session particularly helpful: budget coaches, financial planners, community developers, and anyone looking to scale their reach and impact beyond traditional one-on-one or group formats.

Objectives/Purpose
Winning with money requires a plan. We call that plan a budget. Learning to align your finances to your values is a super power.

So... why doesn't everyone keep a budget? The truth is budgeting is a skill, and it's not easy to acquire! That's where budget coaches come in. Budget coaches are incredibly helpful but they are also hard to access. Limited time availability, high cost, and language barriers make coaching inaccessible to many.

Luckily new technological approaches are changing this. Join us as we break down new ways coaches are scaling themselves to help the world fall in love with budgeting.

- Attendees will be able to list 3 existing barriers to budget coaching (financial, language, accessibility).
- Attendees will learn how niche audiences benefit from niche budgeting education.
- Attendees will be educated on a new FinTech initiative to reduce barriers to budgeting.

Description
Budget coaches should be as popular as fitness coaches. Why aren't they?

In this session we break down the state of the budget coaching industry. Budget coaches provide a lot of value to their clients but have been historically limited by the tools available. In order to help the world fall in love with budgeting coaches are adopting new strategies to scale themselves and reach more clients.

New FinTech initiatives are bringing new levels of access to budget coaches:

• Virtual avatar coaching (low cost, easy access)

• Asynchronous coaching (bite sized help when needed)

• À la carte Zoom coaching (an alternative to programs)

You should walk away invigorated by the new trends in the budget coaching industry. These new ideas will inspire you to think about how you approach your audience. What ways can you continue to scale your efforts so your time and energy are being allocated towards the most effective strategies?

If you encourage people to budget you should walk away being equipped with a new category of tools to recommend. These new tools break down the access issues that have kept so many from getting the guidance they need.

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Motivating Financial Literacy:

An Example of Using Theory to Guide Lesson Plans and Interventions

Jenni Whiteley, MHDFS, AFC ®

Utah State University

Keywords: adult financial education, financial practice interventions, behavioral finance, financial values, critical reflection

Target Audience

Financial Educators and financial practitioners

Objectives/Purpose

Present an example of using theory to guide the creation of an introductory lesson plan for college-aged family finance students. Designing interventions and lesson plans based in theory and research can increase the likelihood of eliciting changes in thinking and behavior (evidence of financial literacy) that financial educators/practitioners seek in students/clients.

Description

I will present the introductory lesson I created for students in my USU Family Finance undergraduate course that aims to motivate students to learn about and incorporate new financial tools and behaviors throughout the semester (or counseling process). I based my lesson plan in Stress Theory (Patterson, 1988) and Transformational Learning Theory (Mälkki, 2012). Financial practioners could easily use many aspects of this lesson plan in private counseling sessions or as at-home assignments to motivate change and continued sessions.

Stress Theory posits that how one assigns meaning (what they value) affects their financial choices as much as having financial knowledge and resources (Patterson, 1988). According to Stress Theory, if students/clients are conscious of what they really believe and value, they may see how those beliefs are affecting their behaviors and how they are using their resources. If their values align with how they are behaving with their resources, they may be more motivated to do more of what is working. If not, they may be more motivated to change their thinking and incorporate better behaviors.

In addition, Transformational Learning Theory states that understanding and changing one's thinking and behaviors takes time because change feels chaotic and uncomfortable. When unfamiliar information or behaviors are presented, people need time to analyze, compare, and process the new ideas and values with their old ones. This is called critical reflection. Without this processing time, students/clients may more easily return to their old ways of thinking and behaving just because it feels more comfortable, even if they are not helping them achieve their goals.

Thus, the goal of my lesson plan is to help students connect with their deepest values and have time to reflect upon how their current financial thoughts and behaviors align with what they really want in their lives. The hope is that when students/clients discover where they are with their values, they will be motivated to learn more about financial tools/thinking/behaviors that can bring them more of what they really value into their lives.

The activities of this lesson could also be valuable when working with cultural differences. Understanding what a client/student truly values, can help educators/practioners better guide clients/students to more appropriate tools that support their financial values.

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Financial Fundamentals for Freelancers, Entrepreneurs, and Gig Workers

Carl Windom, AFC®, FFC® & A. Denae Hannah, AFC®, CFEI®

Keywords: entrepreneurs, creatives, financial coaching, financial counseling, freelancers, gig workers, self-employed, financial literacy, financial capability, financial education, financial adaptability, financial strategy

Target audience

Financial counselors, financial coaches, financial educators

Objectives/Purpose

This workshop is designed for financial counselors, coaches and educators who serve clients who are freelancers, entrepreneurs or gig workers. The goal is to equip practitioners with techniques to help their clients navigate their financial landscapes effectively through the following takeaways:

- Attendees will learn fundamental cashflow skills necessary for freelancers and entrepreneurs including separating personal and business income and expenses.
- Attendees will learn how entrepreneurs can manage their debt and position their personal credit to make them great candidates for business loans in the future.
- Attendees will learn the top tax pitfalls impacting freelancers and entrepreneurs using real-life examples.

Description

Join us to unlock secrets to propel your freelance and entrepreneurial clients to new heights, including effective banking and cashflow techniques, strategies to avoid tax stress, managing debt, and establishing strong credit to set clients up for growth. This workshop is tailored for counselors, coaches and educators eager to help clients increase their financial adaptability and protect themselves against the unpredictable nature of freelance and gig work.

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Captivate and Connect: Mastering Audience Engagement

Andi Wrenn, Coaching Capability; Cain Hill, Magellan Federal, & Michele Godfrey, JP Morgan Chase

Keywords: audience engagement, behavior change strategies, client empowerment, coaching, counseling, interactive learning, motivation techniques, proactive participation, workshop facilitation

Target Audience
All symposium attendees can benefit who work with individuals or groups, are coaches, counselors, or educators.

Objectives/Purpose
The goal of this presentation is to equip financial professionals with the skills and strategies necessary to utilize the art of interaction and engagement effectively, thereby encouraging clients and audience members to actively participate in the learning process and take concrete actions to improve their financial well-being.

Learning Objective 1:
Participants will learn how to create compelling narratives that resonate with their audiences, enhancing their ability to capture and maintain engagement.

Learning Objective 2:
Participants will learn practical strategies for implementing interactive activities that foster participation and encourage their audience to take ownership of their financial goals.

Learning Objective 3: Participants will develop engagements that promote deeper understanding and application to address the concerns of their audience as well as inspire action to improve their finances

Session Description
In an ideal world, attendees would readily engage in one-on-one sessions, workshops, and presentations, taking immediate action to enhance their financial well-being. However, achieving this level of engagement requires more than just delivering information—it demands the creation of compelling and interactive opportunities.

In this session, we will equip financial counselors, coaches, and educators with the tools and strategies needed to transform their presentations into dynamic experiences that captivate and motivate. From crafting compelling narratives to implementing interactive exercises, participants will learn how to effectively engage their audiences, leaving them ready, willing, and able to take tangible steps toward financial improvement. Join us as we explore innovative techniques for empowering individuals to move from passive observers to proactive participants in their financial journey. We have tools and techniques you can use in the work you do!

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Once Upon a Dime: Rewriting Financial Narratives

Andi Wrenn, Coaching Capability

Keywords: client empowerment, coaching, counseling, externalizing, narrative, reframing, resilience, story telling

Target Audience

This presentation is aimed at any professional that wants to have new tools to work with students, clients, or employees to assist in making positive changes using stories.

Objectives/Purpose

This presentation is all about using stories to help people with their finances. We'll talk about how stories can change the way people think about money and how they can imagine a better future. You'll learn easy ways to use storytelling in financial counseling, and how it can help clients feel more confident about managing their money. By the end, you'll see how storytelling can make a big difference in helping people reach their financial goals and feel better about their finances.

Learning Objectives

1. Understand the principles of narrative therapy and its application in financial counseling by gaining insights into fostering resilience and empowerment in clients through narrative-based approaches.
2. Learn practical techniques for helping clients identify and reframe their financial narratives into stories that help them move beyond challenges and on to successful endeavors.
3. Explore ways to integrate storytelling, metaphor, and imagery into financial counseling sessions.

Session Description

This presentation explores the integration of narrative therapy techniques into financial counseling practices. Narrative therapy techniques can serve as a catalyst for clients to reimagine and reshape their financial narratives. Within this presentation, we will explore narrative techniques, offering insights into how they can assist clients in reframing both their past experiences and future aspirations. As we acknowledge the diversity in learning styles and counseling approaches, narrative therapy emerges as a powerful method for guiding clients towards positive financial transformations.

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Role of Financial Literacy in Food Insecurity During the Pandemic

Soo Hyun Cho, Ph.D., California State University Long Beach

Lorna Saboe-Wounded Head, Ph.D., South Dakota State University

Keywords: financial literacy, food insecurity, pandemic, survey data

Target Audience

Financial counselors, financial therapists, Extension educators, government and non-profit community partners and researchers who are interested in the intersection between financial and health issues, especially addressing the issue of food insecurity through financial literacy during the time of crisis.

Objectives/Purpose

The purpose of this research-to-practice session is to examine the link between financial knowledge and capabilities in explaining food insecurity during the COVID-19 Pandemic.

1. Attendees will be able to understand the link between financial literacy and food insecurity.
2. Attendees will identify academic resources that address food insecurity in the lens of financial decision making.
3. Attendees will engage in brainstorming activities to identify ways to address food insecurity through enhanced financial knowledge/capability.

Description

During the COVID-19 pandemic, rates of food insecurity increased. It has been noted that food insecurity is the result of a lack of access to healthy and affordable foods. The pandemic provided an opportunity to better understand other factors that may contribute to food insecurity. The purpose of this research is to investigate the role financial knowledge has on food insecurity. The results will provide implications for professionals working with food insecure individuals and families to better understand their educational and counseling needs.

Data and Sample

During the early stage of the COVID-19 Pandemic, a group of researchers conducted a nationwide survey of 2,300 respondents to understand household health and financial decision making. The Qualtrics survey was administered between May and June of 2021.

Variables

Food insecurity was measured with the following five items during the past 12 months, 1) the food that I/we bought just didn't' last, and I/we didn't have money to get more. 2) I/we couldn't afford to eat balanced meals. 3) In the last month, did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food? 4) In the last month, did you ever eat less than you felt you should because there wasn't enough money for food? And 5) In the last month, were you ever hungry but didn't eat because there wasn't enough money for food?

Financial literacy was measured with five items developed by Lusardi and Mitchell (2006), covering savings account interest, inflation, relation between bond prices and interest rates, mortgage comparison, and stock investment.

Control variables included socio-demographic variables such as age, gender, household income level, education level, household size, and race/ethnicity.

Analysis and Results

The overall sample showed the prevalence of food insecurity ranged between 48% to 64% across the five measures of food insecurity. Please see table 1 below for the results of individual items.

Table 1. Prevalence of food insecurity

Food Insecurity Items	Responses	Frequency (%)
During the past 12 months, the food that I/we bought just didn't' last, and I/we didn't have money to get more.	Never true Often true Sometimes true	840 (36.2) 572 (24.7) 906 (39.1)
During the past 12 months, I/we couldn't afford to eat balanced meals.	Never true Often true Sometimes true	907 (39.1) 491 (21.2) 920 (39.7)
In the last month, did (you/you or other adults in your household) ever cut the size of your meals or skip meals because there wasn't enough money for food?	Yes No	1118 (48.2) 1200 (51.8)
In the last month, did you ever eat less than you felt you should because there wasn't enough money for food?	Yes No	1111 (47.9) 1207 (52.1)
In the last month, were you ever hungry but didn't eat because there wasn't enough money for food?	Yes No	970 (41.8) 1348 (58.2)

When combined, the mean score for food insecurity was 2.60, with a range of 0 ~ 5. Following the categorization method by USDA, 26.4% of the sample had high food security, 33% had low food security, and 40.6% were categorized as having very low food security. This indicates a higher prevalence of food insecurity among our sample compared to that of the national sample. The mean score for financial literacy was 2.26, with a range of 0 ~ 6, which is comparable to the national average, released by FINRA foundation. The correlation results indicate that specific financial knowledge domains were all significantly correlated with experiencing food insecurity.

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What Can We Learn from the FBI that Will Help Us Build More Effective Financial Sessions: 50 Nonverbal Communication Skills in 50 Minutes

Lucy M. Delgadillo & Glen A. Hass, Utah State University

Keywords: connection, empathy, financial counseling and coaching, non-verbal communication, rapport.

Target Audience
All financial professionals who want to enhance their understanding of non-verbal body behaviors that can help or hinder financial interactions with clients.

Objectives and Purpose of the Session

The goal is to equip financial professionals with a deeper understanding of non-verbal communication skills to better manage the flow of a financial counseling or coaching session**.** Exploring 50 non-verbal cues and rules will enhance participants' ability to build empathy, establish trust, create more comfortable and welcoming environments, and foster meaningful connections with clients. This session is not just about learning new skills, but also about validating and recognizing the importance of your existing professional competencies. It aligns with 2 of the 11 core coaching competencies of the International Coaching Federation, including *Establishing Trust and Connection with the Client and Active Listening*, and with AFCPE competency, establishing rapport and connection with clients, which includes body language.

Description
As human beings, communication is intrinsic to our nature; it's inevitable. Even in silence, we convey messages. Non-verbal cues are genuine expressions of our inner thoughts and feelings. While we may maintain a composed demeanor, if we had feelings of shame, blame, guilt, insecurities, under confidence about money our bodies will reveal the truth. For instance, our lips, our eyes, our torso, our hands, legs and feet all play a crucial role in conveying subtle nuances of discomfort or stress. We know that effective financial coaching and counseling demand empathy and connection. Could empathy and connection be conveyed through non-verbal behavior? Absolutely! Not only by maintaining eye contact, being present, having an open posture, mirroring the other person's body language; but also, by understanding non-verbal signs of stress, pacifying behaviors, comfort and discomfort behaviors, and other body language triggered by how the person is processing and receiving information. Identifying these non-verbal cues and other welcoming tips can help you connect with your clients on a deeper level, fostering understanding and trust.

The presentation will include **the 5 rules for observing and decoding non-verbal communication** in financial settings. The 50 non-verbal cues are focusing on stress, pacifying behaviors, comfortable vs. uncomfortable reactions, and welcoming gestures all grounded in **Kinesics**. The session will conclude with a brief presentation on cross-cultural cues on **Proxemics,** the study of how people use and perceive space in communication and explores the ways in which individuals use physical distance to convey meaning in interactions, and **Chronemics,** which refers to the study of how people perceive and use time in individualist vs collective societies. Proxemics and chronemics can vary based on cultural norms and individual preferences.

Disclaimer: Reading people successfully is a skill that requires practice and proper training. In case of doubt, always use your verbal communication skills.

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White Picket Fence or Farce? Middle-Income Perceptions of the American Dream

Alexa Balmuth, Adam Felts, Lauren Cerino, Lisa D'Ambrosio, & Joseph Coughlin, The MIT AgeLab

Abstract

What is the current-day American Dream? How relevant is the idea of the American Dream to how people define their financial attitudes and aspirations? Utilizing qualitative data from focus groups and quantitative data from a pre-group questionnaire, this paper explores how middle-income Latinx, Black, and Asian American adults between the ages of 30 and 62 define and perceive the concept and attainability of the American Dream.

Background

With years of prominence in political and social discourse, the "American Dream" has made its way into the cultural identity of the United States. The American Dream as a concept arose in the early 20th century. In its original use, the term referred to collective national ideals of equality, justice, and democracy, and was developed in reaction to the proliferation of wealth inequality and disproportionate political power among wealthy Americans during the Gilded Age in the 1920s. During the Cold War in the 1950s, the idea of the American Dream shifted to represent individual economic success. Over the past century, definitions of this dream have ranged from a broad understanding of meritocracy to more specific interpretations such as home ownership (Kodé, 2024).

Throughout its evolution, the promise of the American Dream has had significant role in political discourse. In the 2024 presidential campaign, both major party candidates have called on the American Dream in their messaging to connect with their audience. Former President Trump promises to "bring back the American Dream" while Vice President Harris speaks of a future where "every person has the opportunity not to get by, but to get ahead." The prevalence of this ideal speaks to its potential strength as a touchpoint in spheres beyond the political; people's understanding of the American Dream offers insight into decision-making processes across domains.

Though personal interpretations and definitions vary, polling organizations commonly explore the U.S. public's belief in the "American Dream," with attention to whether belief in the concept has increased or decreased. Polling has shown that social mobility and declining income inequality increase belief in the American Dream, alongside short-term economic performance (Wolak & Peterson, 2020). There are also differing perspectives on the American Dream along lines of race and ethnicity. White and Asian adults are more likely than Black and Hispanic adults to say they have already achieved the American Dream while Black, Hispanic, and Asian adults are more likely to say they are on their way to achieving it than White adults (Borelli, 2024). When examining socioeconomic status (SES), belief in this ideal weakens for lower-income groups. However, even when SES is lower, Asian and Hispanic Americans still believe in the opportunity to do better in the future, which has been attributed to supportive immigrant communities showcasing routes to "success" through avenues of college degrees, home ownership, and higher income (Vasilogambros, 2016).

Questions around how people think about and perceive the attainability of the American Dream are of particular interest when applied to people in the middle market, who, over the past several years, have been experiencing the impacts of inflation on daily expenses, have had wages and salaries that have lagged inflation, and have seen housing prices increase dramatically (Smialek, 2024; Younis, 2021).

An important nuance to investigating this topic, however, is understanding what exactly Americans envision when asked their beliefs about the American Dream. While many picture a home and a white picket fence, it is important to consider whether people define and consider the American Dream to be a concrete goal such as homeownership, or of hard work leading to economic success, of children doing better than their parents, or something more abstract, such as freedom of thought or equal opportunity. Deconstructing how the public defines the American Dream, and how identity and prior experience, such as immigration status, might influence people's definitions, can surface people's financial goals and values and their relationship to a common narrative of prosperity, as well as determining how financial professionals should provide advice to clients in pursuit (or not) of that dream.

Purpose

The purpose of this study was to explore how middle-income **Latinx, Black, and Asian American** adults between the ages of 30 and 62 define and perceive the concept and attainability of the American Dream.

Research Questions

Research questions included the following:

1) What does the American Dream mean to middle-income Americans? What milestones or goals are considered part of the American Dream? Does the American Dream feel real, or accessible, to Americans these days?
2) How optimistic or pessimistic do Americans feel about the future of the American Dream?
3) How, if at all, do these beliefs vary by demographic factors such as household income, immigration status, and race/ethnicity?

Methodology

A total of 57 participated in the focus groups, and 53 of these participants completed pre-group questionnaires. Demographics for the sample are displayed in table 1.

Gender was evenly split, and participants ranged in age from 30 to 60 (M=46.6). Household incomes varied, with 8.8% between $50,000-$59,999; 10.5% between $60,000-$66,999; 17.5% between $67,000-$75,999; 5.3% between $76,000-$89,999; 36.8% between $90,000-$126,999; 5.3% between $127,000-$149,999; and 12.3% between $150,000-$179,999.

Participants were spread across six 90-minute focus groups that were conducted between May 6 and May 8, 2024. Groups were designed to ensure representation of different minority population, as well as variation in immigration status (i.e., first, second, and third generation Americans). This study focused on Latinx, Black, and Asian American segments of the middle market population as these groups are expected to grow relative to the general population (Weller, Francis and Tolson, 2024). To build rapport and promote open conversations, groups were stratified based on participant identity, and each group was moderated by someone who matched the primary racial or ethnic identity of group participants (Greenwood, Ellmers and Holley, 2014; Fern, 2001). Focus groups were conducted in English. Group breakdowns were as follows:

Group 1: Ten individuals of Chinese descent

Group 2: Nine individuals of Indian descent

Group 3: Nine individuals of Black American descent (all with two or fewer generations in US)

Group 4: Nine individuals of Black American descent (eight with 3+ generations in US, one with 2 or fewer generations in US)

Group 5: Ten individuals of Mexican descent

Group 6: Ten individuals of non-Mexican Latinx or Hispanic descent

Focus groups were recorded and transcripts were generated. An inductive thematic analysis approach was taken to extract overarching themes related to the American Dream.

To accompany these qualitative data, prior to the focus groups, all participants completed an online pre-group questionnaire. Pre-group questionnaire data was collected on the Qualtrics survey platform and downloaded to SPSS for analysis. Descriptive statistics were run on demographic variables and items related to the American Dream.

Results

Participants were given a list of constructs in the pre-group questionnaire and asked which they considered to be a part of "the American Dream." Responses to these items are displayed in Figure 1.

A majority of participants considered all of the different ideas they were offered to be a part of the American Dream. They did, however, envision the Dream as having a strong economic component, providing some degree of economic wellbeing. Responses with the greatest degree of consensus (over 90% agreement) included owning your own home, having a comfortable retirement, and the expectation that your children will have a better life. There was a high degree of consensus around having a successful career as part of the Dream, but less so around having the ability to send children to college. There was significantly less consensus around "Being wealthy" as a part of the Dream, with only 52.8% of people saying they thought it was. In short, people seem to consider the American Dream as offering some degree of economic security, but not a guarantee of wealth. In contrast to the economic elements of the Dream, there was still majority consensus around tenets of individual liberty (freedom to choose your own path) and opportunity (similar opportunities available to all people regardless of social background), but this degree of agreement was slightly less than around most of the economic components.

When asked about their own ability to have or live the American Dream, a majority of participants (67.9%) said that they did believe it was "accessible for people like you," but 17% said it was not, and 15.1% said they did not know (total N=53). Participants were less certain about the accessibility of the American Dream for the next generation of young people – people graduating from high school now – with only 34% indicating that they thought the Dream would be accessible to this group, 39.6% saying that they did not think it would be accessible, and 26.4% saying they did not know (total N=53). In short, half of the people who thought the American Dream was accessible to them either did not think it would be or were not sure it would be for the next generation of young adults. When focus group participants were asked about their own economic futures, they were generally optimistic; these data, however, suggest that they were less sanguine about the future prospects of the newest cohort of young adults.

Participants expanded upon their definitions of and belief in the American Dream during focus group discussions, during which descriptions of what the American Dream was followed the two thematic strands in the pre-group questionnaire. The first was that America offered people self-determination, freedom of opportunity, and the ability to advance through hard work. Participants said:

> "[The] American Dream [is] that with hard work, anyone can rise up and overcome the circumstances of their birth" (Chinese American participant).

> "That was my American Dream: to be able to become what I wanted to become. And that's the same thing I want to really teach my [daughters] … that's my version of the American Dream, I can teach my children, you can be whatever, whoever you want to be" (Black American participant).

The second strand was more explicitly focused on attaining economic milestones, notably owning a home and financial self-sufficiency. Many first-generation immigrants came to the U.S. for economic opportunities. Their American Dream was that if they worked hard, they could achieve material success – a home, car, education for their kids, etc. Second-generation Americans offered views of the American Dream that refined this initial vision. One woman said:

> "The American Dream for me is not have to work a nine to five to make money. The American Dream is be able to have the leisure to do whatever I want to do, have enough money in the bank to sustain my lifestyle and still have security in the future…. The American Dream to me is just having enough income or stability to help myself and my children and set them up for their future and generational wealth. Not what my dad taught me; my dad just said get a house" (Black American participant).

Some participants believed that the current economic situation in the U.S makes achieving certain common aspects of the American Dream more difficult, particularly due to high costs of housing. One person commented:

> "If the American Dream is the house, owning your own house, that has become practically impossible for someone living in California where I live, for the younger generation…. So yeah, that is looking very bleak if that is the American Dream" (Indian American participant).

Younger participants in particular felt that the American Dream seemed daunting to achieve, or in some cases even impossible:

"Yes, it's still attainable. It's just gonna take some creativity and ingenuity. And I do believe that given, I would say, hopefully five to 10 years, I'll be able to achieve the dream that I see for myself and as will everybody here in this group" (Black American participant).

"I think as a millennial, the idea of the American Dream is absolutely dead. With home prices completely outrageous. Everything around you is going up as far as utilities, insurance for your car, everything; gas is astronomical. So, the thought of owning a home is a distant – it's a pipe dream" (Latinx participant).

Among Black American participants, there was a strand of caring for family across generations interwoven into their descriptions of the American Dream:

"I really want to have a family, wife and kids and be able to support my little baby cousins and people in the family if they ever need help… [to] be the man in the family who can take care of everybody, that's my Dream" (Black American participant).

Discussions also suggested that the current day American Dream is highly individualized; while some participants mentioned similar concrete foundations as proposed in the pre-group questionnaire such as owning one's home, others discussed less tangible definitions such as freedom and opportunity. In many cases, respondents spoke about "my" American Dream instead of "the" American Dream; in other cases, respondents were reluctant to provide a specific definition of the American Dream, feeling that it could differ from person to person.

"Part of the American Dream is not that everything has to work out, but that you have the opportunity to try." (Chinese American participant)

"I feel that the American Dream should be different for everyone. It should be more as a personal goal and something that is going to drive you to happiness rather than making it so generalized." (Mexican American participant)

"My American Dream, for me, was to come to this country and be whoever, whatever I wanted to be." (Black American participant)

"I think traditionally the phrase the American Dream has really stood for a house, to own your own house. And then there's several variations of that. You know, to some people, clean water would be an American Dream, depending on, you know, where they're coming from. Right? So financial freedom, the ability to find a job, to get a green card and live in this country as a citizen, all of these things are part of the American Dream for an immigrant." (Indian American participant)

"Freedom – freedom to act, to think – not to be scared of your boss, your neighbor; make own decisions and follow own path." (Latinx participant)

Several participants also described an effort to pass their idea of the American Dream to their children.

> “I'm instilling that with my kids. And I'm telling them, you have to do better than me, because that's the whole point of coming here. And that's something that my parents actually instilled in us.” (Black American participant)

> “The American Dream is opportunity. And being an immigrant, you are given lemons, you make lemonade. But you're in the United States. You can make lemon pie. You can make a lot of things out of it. So for me, the generational wealth that I'm leaving my kids, it's mindset.” (Latinx participant)

Additionally, several participants discussed how even for themselves, the American Dream may evolve over time, with goals developing throughout the lifespan.

> “So I'm coming to this country as a 14 year old, I think I bought into the idea of the American Dream. And for me, it was being raised with the idea of going and getting your education and being self-sufficient. So getting a well-paying job with great benefits, you know, or benefits where at least you have what you need, for yourself and your children. And, owning a house was very important to me. It's something that I wanted for myself. And so I've accomplished that. And now my next goal is retirement and retiring, where I'm able to buy a vacation home and I'm able to, have my family, my, especially my two children, experience things that I was able to experience when I was younger and my parents were able to do for me and just build on what they have instilled in me and taught me. So I think part of my American Dream is just doing a little bit better in teaching my kids things like generational wealth.” (Latinx participant)

Many participants expressed pessimism around the future of the American Dream, specifically when it came to the practicality of owning a home given high costs of living.

> “Our kids have that possibility, but, you know, are the grandkids going to be able to have the nice home and the financial stability and security? You really question whether this next generation, this generation that's being born now, is going to have that access.” (Black American participant)

> “Well, like, for me, the American Dream is like having enough income to where I own my property outright. [...] You know, it's just not real to me. [...] Like they tell you go to school and, you know, do this, work hard and you're going to have this lifestyle. And it's not true because there's other factors, you know, like your race, your gender that come into play.” (Black American participant)

> “When I think about it, I think about the concept from the 50s and 60s where the American Dream was to be able to have an income, to afford a house, take care of your kids. So that used to be an American Dream. For me, I never wanted kids, so that doesn't factor into anything. And, yeah, housing is just astronomical right now. Just looking on the forums online, it's just people are getting priced out. Even they have six figure incomes. They cannot afford housing, especially in Northern Virginia area, D.C. area. Most are getting priced out. So the American Dream is getting further away.” (Chinese American participant)

Implications

Participants generally described two strands of the American Dream: one around economic opportunities (particularly around achieving home ownership and financial self-sufficiency) and the second around individual liberties and self-determination. Most people felt like the American Dream was still alive for them, but younger people in particular were less sanguine about their abilities to achieve home ownership as part of the American Dream. But definitions of the American Dream – as well as perceptions of it – were also highly individualized, varying widely from person to person. Rather than seeing the concept representing a common notion of prosperity or national ideals, participants often spoke about their own personal American Dream, or were hesitant to provide a general definition. Nonetheless, the concept was highly activating and relevant to respondents, generating both strong positive and negative responses. These strong responses suggest that reference to the American Dream may be an effective way to surface deeply held financial aspirations and attitudes in conversations.

When working with clients, it is critical to discuss their financial aspirations and expectations from a personal, familial, and cultural lens. Conversations about the American Dream may allow financial professionals to help their clients define what their own goals are for themselves and their families. It may also help surface perceived systemic obstacles to economic opportunity, allowing for discussions about how to address and overcome challenges related to embodied identity and economic inequality.

Cultural and familial traditions and expectations often play an important part in the development of these attitudes; thus these discussions may serve not only as important information in the development of a financial plan, but also a stepping-stone in the further development of a rich, trusting client-counselor relationship. Demonstrating to your client that you understand their values and perspective can be an instrumental component of trust and loyalty in the financial advice setting.

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Table 1. Focus group participant demographic data

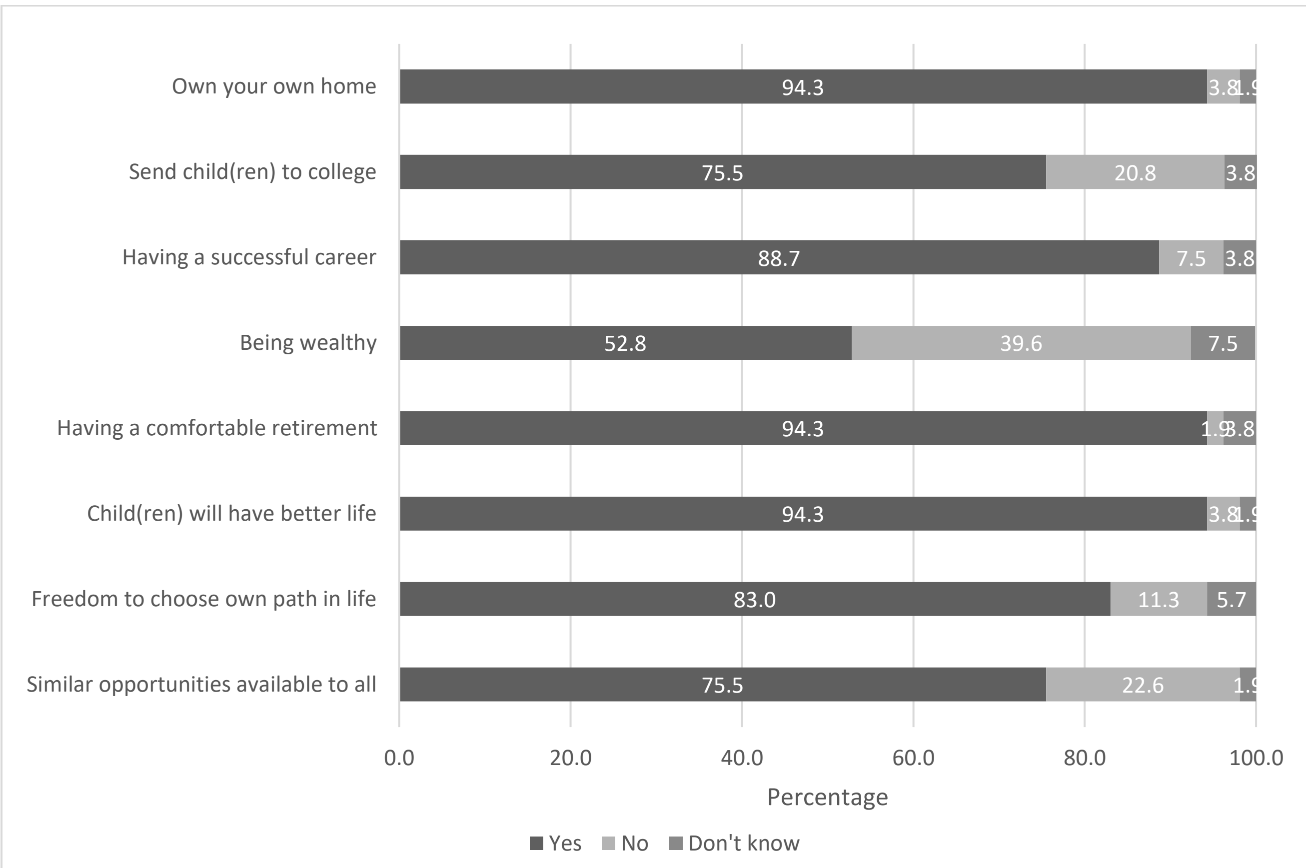
	Total	Asian American		Black American		Latinx or Hispanic	
		Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Gender							
Male	49.1%	5	4	4	5	5	5
Female	50.9%	5	5	5	4	5	5
Average age	45.9	50.0	44.7	44.8	42.7	46.3	46.8
Education							
High school diploma or GED	8.8%	0	0	0	1	1	3
Vocational or technical school	7.0%	0	0	1	2	1	0

Some college	8.8%	0	0	0	1	3	1
Undergraduate degree	38.6%	4	5	4	4	2	3
Associates degree	3.5%	0	0	1	0	0	1
Some graduate school/study	7.0%	1	1	1	0	1	0
Advanced or graduate degree	26.3%	5	3	2	1	2	2
Marital status							
Single, never married	33.3%	2	4	4	5	2	2
Married	56.1%	8	5	3	3	6	7
Separated	1.8%	0	0	0	0	1	0
Divorced	7.0%	0	0	2	1	0	1
Not married, living with partner	1.8%	0	0	0	0	1	0
Average number of people in HH	3.0	3	3	4	3	3	3
Average number of children	1.4	1	1	2	2	1	2
Employment status							
Employed full-time	66.7%	6	7	7	6	5	7
Self-employed full-time	12.3%	4	0	0	0	2	1
Employed part-time	10.5%	0	0	2	1	2	1
Self-employed part-time	5.3%	0	2	0	0	1	0
Unemployed, looking for work	1.8%	0	0	0	1	0	0
Homemaker/Stay at home caregiver	3.5%	0	0	0	1	0	1
Current living arrangement							
Own home, but pay a mortgage on it	49.1%	6	3	3	4	5	7
Own my home outright, no mortgage	8.8%	1	0	1	1	1	1
Live with family/friends and provide some kind of services or support to them	1.8%	0	1	0	0	0	0
Live with family/friends and pay some amount of rent	5.3%	1	1	1	0	0	0
Rent home	35.1%	2	4	4	4	4	2
Immigration status							
Immigrated (Self)	29.8%	3	4	3	N/A	2	5
Mother immigrated	61.4%	6	8	8	N/A	5	8
Father immigrated	54.4%	6	8	6	N/A	5	6
Maternal grandparents immigrated	26.3%	3	2	3	N/A	5	2
Paternal grandparents immigrated	17.5%	2	2	1	N/A	5	0
Great grandparents immigrated	3.5%	1	1	0	N/A	0	0
U.S. Citizen	98.2%	10	9	8	9	10	10
Household income							
\$50,000-\$59,000	8.8%	1	1	0	1	1	1
\$60,000-\$66,999	10.5%	1	0	2	2	1	0
\$67,000-\$75,999	17.5%	1	0	3	3	2	1
\$76,000-\$89,999	5.3%	0	0	1	0	2	0
\$90,000 – \$126,999	36.8%	4	4	2	3	2	6
\$127,000-\$149,999	5.3%	0	1	0	0	1	1
\$150,000-\$179,999	12.3%	3	3	0	0	1	0
\$180,000-\$200,000	3.5%	0	0	1	0	0	1
Geographic coverage by state							
		CA-3 GA-1	CA-4 IL-1	CA-6 CO-1	AL-1 CA-1	CA-6 IL-1	CA-3 FL-1

		IL-1 MD-2 NY-2 WI-1	NJ-1 NY-1 OH-1 TX-1	NJ-1 Wash, DC-1	GA-2 IL-1 KY-1 PA-2 TX-1	NV-3	GA-2 IL-1 PA-1 TX-2

Notes: Data in Table 1 are from the screener questionnaire. Column entries in the Total column are percentages and entries in other columns are case counts, with the exception of columns for average age, average number of people in household (HH) and average number of children, which are averages overall and within each group.

Figure 1. Participants' responses around what they consider to be part of "the American Dream."



Notes: Data are from the pre-group questionnaire; N=53.

Exploring the Emotional and Physical Consequences of Familiar Identity Theft Victimization: A Rasch Analysis

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Background

It is widely recognized that identity theft victims experience negative emotional and physical consequences as a result of the crime (e.g., Betz-Hamilton, 2022; Golladay & Holtfreter, 2017). These consequences can be amplified for victims of familiar identity theft, which occurs when the victim personally knows the offender (Hayes, 2021). The U.S. Bureau of Justice Statistics developed the National Crime Victimization Survey—Identity Theft Supplement (NCVS-ITS), which is used to collect nationally representative data from identity theft victims biannually (Bureau of Justice Statistics, 2021). An item on the NCVS-ITS asks respondents to indicate if they have experienced any of a series of nine specific emotional consequences, including a) feeling worried or anxious, b) feeling angry, c) feeling sad or depressed, d) feeling vulnerable, e) feeling violated f) feeling like he/she couldn't trust people, g) feeling unsafe, h) feeling confused, and i) feeling some other way. A similar item on the NCVS-ITS asks respondents to indicate if they have experienced any of a series of eight specific physical consequences, including a) fatigue, b) trouble sleeping, c) muscle tension or back pain, d) headaches, e) upset stomach, f) changes in eating or drinking habits, g) high blood pressure, and h) some other physical problem.

The 2016 NCVS-ITS dataset is structured so each identified emotional and physical consequence is a separate variable. While these variables have been utilized in previous studies that utilized regression analyses (e.g., Betz-Hamilton, 2022; Golladay & Holtfreter, 2017) and structural equation modeling (e.g., Betz-Hamilton & Donovan, 2023), no known Rasch analyses have been conducted. Rasch models are a type of item response theory model that measure underlying traits that influence responses on an item level. This is important to examine when multiple items serve as indicators to then be grouped into a mean score representing these larger variables. The purpose of this study was to explore if the emotional and physical consequences data from the 2016 NCVS-ITS fit the Rasch model as unidimensional constructs for familiar identity theft victims.

Methods

Data and Sample

A random sample of 392 respondents to the 2016 NCVS-ITS used by Betz-Hamilton and Donovan (2023) was utilized for this study. Thirty-two individuals were removed from analyses of emotional consequences due to extreme person fit scores, for a total sample of n = 297. No individuals were removed from analyses of physical consequences as all person fit values were acceptable. This data did not contain demographic variables; therefore, descriptive statistics of the sample are not reported. Moreover, Betz-Hamilton and Donovan (2023) found the emotional consequences variables "confused" and "feeling some other way" had poor factor loadings in a confirmatory factor analysis (CFA) and were not included in this dataset. The physical consequences variable "feeling some other way" also had a poor factor loading in a CFA by Betz-Hamilton and Donovan (2023) and was not included in this dataset. Each emotional and physical consequence was measured on a dichotomous scale (1 = Yes, 2 = No). As "the sample size for Rasch analysis should be equal to the number of questions multiplied by the number of categories" (Denis, et al., 2017, p. 140), the sample size is more than adequate.

Analysis

All analyses were conducted using Winsteps 5.6.2.0. A major assumption of Rasch models is that the measure must be unidimensional to ensure all items are contributing to a single idea. To assess dimensionality, variance explained by the Rasch dimension was set to a minimum of 40% (Linacre, 1999). The criterion for the Eigenvalue for the first contrast was set to less than 3.0 and the criterion for unexplained variance in the first residual was set to less than 10% (Eakman, 2012). Additionally, in Rasch models, the data is expected to fit a strict model based on theoretically grounded psychometric expectations. To assess fit and misfit, the criteria of infit mean-square (MNSQ) values was set to 0.5 to 1.5 (Linacre, 2016), with standard deviation values set to less than 2.0. Standardized mean-square (ZSTD values) were set to approximately -2.0 to 2.0. To assess scale fit, the criteria for infit MNSQ values was set from -2.0 to 2.0 (Linacre, 2002).

Finally, reliability was assessed by both Cronbach's alpha being above 0.70 and the criterion of person and item separation values equal to or greater than 2.0 (Linacre, 2016). In Rasch models, item separation indicates reliability due to the model expectation of having items spread along a continuum thus indicating a construct's 'ruler' with some items being more difficult than others. In reverse, person separation refers to persons being spread along this construct ruler indicating reliability that the items can differentiate person ability.

Results

Emotional Consequences Rasch Model

Emotional consequence items group together in a unidimensional construct with 39.4% of the variance explained by the Rasch dimension. The Eigenvalue for the first contrast was 1.52 with the variance explained by the first contrast was 13.2%. Global fit values were acceptable, with an infit MNSQ = .89 (*SD* = 0.31) and infit ZSTD = -.16 (*SD* = .74). Regarding item fit, infit MNSQ values ranged from .80 to 1.22, which is ideal and infit ZSTD scores ranged from -2.05 to 1.02. Regarding scale fit, the infit MNSQ value for "Yes" responses was 1.02; the value for "No" responses was .99. These values are between -2.0 and 2.0, indicating the scale had good fit. See Figure 2 for a category probability plot. As the data were dichotomous, a plot in the shape of an 'x' was expected.

Person fit was acceptable with infit MNSQ values ranging from .36 to 1.54 and infit ZSTD scores ranged from -1.43 to 1.48 indicating all persons responded as expected within the model. Persons responding in consistent manner is also noted by a Cronbach's alpha of 0.77. Still, poor person separation was found at 1.29, indicating persons were grouped together and not spread across items (e.g. persons all had roughly the same level of emotional consequences and were not spread out with various levels of the construct as expected).

There was strong item separation at 7.37. To visualize construct coverage, an item-person map (Figure 1) demonstrates items are spread nicely throughout the construct to create a ruler of response difficulty. Specifically, feeling unsafe is the easier item for people to respond "Yes" to feeling, while feeling angry is more difficult to respond "Yes" to. Items measuring feeling mistrustful and feeling vulnerable overlap, thus measuring the same point of the construct's ruler.

Physical Consequences Rasch Model

Physical consequences can also be considered unidimensional with 30.5% of the variance explained by the Rasch dimension. The Eigenvalue for the first contrast was 1.45 with the variance explained by the first contrast was 14.4%. Global fit values were also acceptable, with an infit MNSQ = 1.09 (*SD* = 0.25) and infit ZSTD = .09 (*SD* = .64). Regarding item fit, infit MNSQ values ranged from .74 to 1.47, which are excellent. Regarding scale fit (Figure 4), the infit MNSQ value for "Yes" responses was 1.00; the value for "No" responses was .99. These values are between -2.0 and 2.0, indicating the scale had good fit.

The same pattern is noted for person reliability with Physical Consequences as seen in Emotional Consequences. Person fit infit MNSQ values ranged from .61 to 1.56 and infit ZSTD scores ranged from -1.22 to 1.62 and the Cronbach's alpha was .87, thus indicating consistent responses across items. Poor person separation was found at .57, again indicating persons are grouped together on the construct ruler demonstrating they experience physical consequences in a similar manner.

There was acceptable item separation at 2.75. To visualize construct coverage, an item-person map (Figure 3) showed experiencing changes in eating or drinking habits is the easiest item to respond "Yes" to while experiencing while having trouble sleeping is the hardest item to respond "Yes" to. With a majority of respondents reporting high levels of physical consequences, it is concerning that there are no items measuring respondents who indicate very high levels of physical consequences.

Discussion

The results of this study indicate that the emotional consequences data and physical consequences from the 2016 NCVS-ITS fit the Rasch model. The models were found to be unidimensional, consistent with a confirmatory factor analysis conducted by Betz-Hamilton and Donovan (2023). While the emotional consequences data demonstrated acceptable fit in many areas (e.g., global fit, scale fit), person fit was a concern. In Rasch models, person fit is measured by the ability of persons to separate items. Likely this sample has a poor separation due to the clusters of individuals who indicated they had experienced few emotional consequences and those who had experienced numerous emotional consequences (e.g. the sample is too similar).

While the physical consequences data demonstrated acceptable fit in many areas (e.g., global fit, scale fit), person separation was a concern. Likely this sample has a poor separation for due to the high number of individuals who indicated they experienced numerous physical consequences (e.g. the sample is too similar).

The item-person maps in Figure 2 and 3 indicate there are additional emotional and physical consequences that could be considered for inclusion, given the wide gaps between scale items. Moreover, items to be included in the future should be severe in nature to better measure individuals with extremely high levels of emotional and physical consequences on the scales. Items that measure less severe emotional consequences should also be included to better measure individuals with low levels of emotional consequences. This is consistent with the person fit concerns described above. Determining specific emotional and physical consequences familiar identity theft victims experience could be found via qualitative studies focused on familiar identity theft victims' experiences; findings from such studies could be used to generate additional relevant items for the NCVS-ITS.

For financial counselors and planners who rely on information based on 2016 NCVS-ITS data, caution should be taken in interpreting information on emotional and physical consequences experienced by familiar identity theft victims and applying it to practice as the severity of the emotional and physical consequences experienced by clients may be much greater than is currently represented by the survey items. For clients who disclose experiencing familiar identity theft victimization, additional questions should be asked to get a greater sense of the client's emotional and physical well-being. Referrals to local mental health professionals and health care providers may be warranted. Future research should explore if these results are consistent across demographic groups.

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Figure 1. *Item-person map for emotional consequences.*

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 .8 +       11111                                     22222       +
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    |                1111                     2222                |
    |                    111               222                    |
 .6 +                       111         222                       +
    |                          111   222                          |
 .5 +                             ***                             +
    |                          222   111                          |
 .4 +                       222         111                       +
    |                    222               111                    |
    |                2222                     1111                |
    |            2222                             1111            |
 .2 +       22222                                     11111       +
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    |2                                                           1|
    |                                                             |
 .0 +                                                             +
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    -2             -1              0              1              2
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Figure 2. *Category probability plot for emotional consequences.*

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MEASURE    PERSON - MAP - ITEM
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Figure 3. *Item-person map for physical consequences.*

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1.0 +                                                             +
    |                                                             |
    |1                                                           2|
    | 111111                                               222222 |
 .8 +       11111                                     22222       +
    |            1111                             2222            |
    |                1111                     2222                |
    |                    111               222                    |
 .6 +                       111         222                       +
    |                          111   222                          |
 .5 +                             ***                             +
    |                          222   111                          |
 .4 +                       222         111                       +
    |                    222               111                    |
    |                2222                     1111                |
    |            2222                             1111            |
 .2 +       22222                                     11111       +
    | 222222                                               111111 |
    |2                                                           1|
    |                                                             |
 .0 +                                                             +
    -+--------------+--------------+--------------+--------------+-
    -2             -1              0              1              2
     PERSON [MINUS] ITEM MEASURE
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Figure 4. *Category probability plot for physical consequences.*

Financial Ratio Analysis of US Households

Guopeng Cheng, Virginia Tech & Chen Xu

Abstract

Using financial ratios to assess households' finances has been widely adopted by financial professionals, educators, and researchers in the past few decades. Financial ratios provide objective measures of household financial status, and they are simple to be interpreted and understood. Among many essential financial ratios, investment assets to net worth ratio (IANWR) has been used to measure multiple household status including financial strength, financial wellness, and retirement adequacy (DeVaney, 1993; Garman & Forgue, 2000; Baek & DeVaney, 2004). The purpose of this study is to examine the impact of IANWR on US households by using the 2022 Survey of Consumer Finances. Results and implications for financial professionals and researchers are discussed.

Keywords: financial ratios, financial education, personal finance

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A Coaching Model to Help Individuals Become EMPOWERED and Take Control of Their Finances when Faced with Obstacles such as The Benefits Cliff

Sharon Carr, MBA, AFC®, CFEI®, Money Management Coach, Supports to Encourage Low-Income Families

Target Audience

Financial Educators and Practitioners that engage with low-income individuals that desire coaching, encouragement, and support as they manage their finances when faced with obstacles such as the benefits cliff.

Abstract

The premise of this analysis and poster presentation is to provide a glimpse into how individuals that receive public assistance can cross the bridge from disempowered to empowered when faced with obstacles such as the benefits cliff. This analysis will suggest the use of empowerment coaching as a tool to help individuals become empowered and take control of their personal finances to reach the financial freedom they desire.

Keywords: benefits cliff, empowered, financial freedom, public assistance, self-sufficiency

Introduction

When an individual decides, they would like to break the cycle of poverty in their household, it can be a scary experience. Often the individual will experience anxiety, feel unworthy, see too many obstacles in their way, or be unsure of their ability to succeed. The individual is forced to set priorities to determine what are their immediate needs: food, housing, childcare, etc. The individual is forced to deal with the fear of losing public assistance benefits.

Individuals receiving public assistance benefits today receive minimal cash benefits (TANF) but receive more in-kind benefits such as food assistance (SNAP), housing assistance (Section 8 or subsidized), Medicaid, and childcare vouchers. To be eligible for these benefits the individuals must meet the income and work requirements established by the federal and state governments.

No person receiving public assistance benefits is the same. Circumstances such as generational poverty, divorce, homelessness, death of a spouse, disability, loss of job, etc., can lead a person to apply for public assistance. When a person is dealing with life challenges, they are often thinking of what they need to manage a monetary crisis. Once they feel they have control of the crisis, they can focus on how to adjust their household budget due to loss of public benefits. Dealing with the benefits cliff is stressful and challenging. According to the National Conference of State Legislatures (NCSL 2024), "benefits cliffs (the "cliff effect") refer to the sudden and often unexpected decrease in public benefits that can occur with a slight increase in earnings." Fed Communities published an article that states "exceeding income limits can cause swift, jarring impacts to ripple out from what would otherwise be an exciting work transition. A change to or loss of benefits may mean that suddenly, a family can no longer live in the same housing unit or send their child to the same childcare program" (Chiarenza, G. 2022)

Background

When it comes to money, everyone desires to do what they want with their money and live the life they desire for themselves and their household. "An individual is considered to be empowered financially when they make wise and mindful choices regarding their money in order to reach their financial goals" (Center for Financial Empowerment 2024).

Poverty is defined as "the state of one who lacks a usual or socially acceptable amount of money or material possessions." (Merriam Webster Dictionary 2024). Poverty affects a person's ability to be in control of their money. The individual feels the money or resources they receive such as public benefits is not enough to take care of their basic needs. The individual may feel society does not care about them and the system is set up to keep them living in poverty. "The cycle of poverty is a term used to describe the phenomenon where poor families stay impoverished for at least three generations" (Williams, G. 2023).

According to a study done by Princeton University, a unique perspective regarding the causes of persistent poverty was presented. "The researcher, (Kelly, M. 2013), suggest that being poor may keep a person from concentrating on the very avenues that would lead them out of poverty. A person's cognitive function is diminished by the constant and all-consuming effort of coping with the immediate effects of having little money, such as scrounging to pay bills and cutting costs. Thusly, a person is left with fewer "mental resources" to focus on complicated, indirectly related matters such as education, job training and even managing their time." In the state of Ohio, it is estimated that 26.2% of the population lives below 200% of the Federal Poverty level (Census Bureau, 2024). Below is also a list of the poverty levels by people in household.

2024 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA

Persons in family/household	Poverty guideline		
	100%	150%	200%
1	$15,060	$22,590	$30,120
2	$20,440	$30,660	$40,880
3	$25,820	$38,730	$51640
4	$31,200	$46,800	$62,400
5	$36,580	$54,870	$73,160
6	$41,960	$62,940	$83,920
7	$47,340	$71,010	$94,680
8	$52,720	$79,080	$92,260

For families/households with more than eight persons, add $5,380 for each additional person. HHS Poverty Guidelines for 2024 (hhs.gov 2024).

“The living wage, also known as the livable wage, is the income required to cover basic family needs without reliance on outside assistance” and the living wage required in Ohio to be able to take care of basic needs is $31,885 for a single person (World Population Review 2024).

This analysis focuses on the state of Ohio. “In the state of Ohio, the Ohio Works First, provides cash assistance to eligible low-income families with children for up to 36 months using the state's portion of Federal Temporary Assistance for Needy Families (TANF) dollars.” (Ohio Works First program 2024). Once the person completes the education or workforce program and obtains employment, the individual is required to recertify their income at the required time, to continue receiving the assistance. There are certain reasons that you can be excused from the work requirements when you are requesting benefits (SNAP Work Requirement, usda.gov, 2024). They are as follows:

- Already, working at least 30 hours a week (or earning wages at least equal to the federal minimum wage multiplied by 30 hours).
- Meeting work requirements for another program (TANF or unemployment compensation).
- Taking care of a child under six or an incapacitated person.
- Unable to work due to physical or mental limitation.
- Participating regularly in an alcohol or drug treatment program.
- Studying in school or a training program at least half-time (but college students are subject to other eligibility rules).

Interviews

As part of this analysis three individuals were interviewed. They gave permission to share details of their story. The focus was to analyze their current situation, the challenges they face especially when faced with a benefits cliff, and to determine what is needed from the financial coach and other resources to help them move forward. The names of participants have been changed for privacy reasons.

Interviewee #1 (Brandy)

Brandy is a single mother who works part-time and receive Supplemental Security Income (SSI). She loves spending time with her son and working with children. Her child is four years old and attends pre-school at the daycare center where she works. She currently earns $13 an hour on average for 24 hours a week at the daycare. She receives $150 in food assistance (SNAP), subsidized housing based on income, and $150 voucher weekly for childcare which covers half of the expense. The weekly cost for childcare is $300 a week. Her current rent per month is $775. Brandy declined a recent offer for a promotion and increase in pay to $16.00 an hour due to the fact she does not want to experience a reduction in her SSI and housing benefits. She states her financial goals are to build her savings for both emergencies and to obtain better housing. Additionally, she wants to build her credit, pay off some debt, and her long-term goal is to buy a home.

The cost of food and childcare has increased significantly over the past year, and Brandy feels that she will not be able to provide for her child without the benefits. She rejected the promotion due to her fear of experiencing a reduction in her benefits. Her biggest concern is if she gets sick and cannot work or lose her job, she will not be able to take care of her son. Brandy currently saves $200 a month through automatic deposits into her saving accounts. She often finds herself needing to access funds in the savings to address needs with her car and unexpected expenses. She feels stuck and does not see a way out of the situation. She states she finds it helpful to engage and meet with a financial coach who she feels is compassionate, understands the challenges, and encourages her to keep going even when life gets hard.

Brandy is still currently working on her path of self-sufficiency. She is hopeful that in a year she will be able to move into a better apartment for herself and her child. Figure 1 shows a view of her budget. The budget shows a small surplus of funds. An increase in income over the surplus amount can lead to her benefits being reduced. Her spending must be managed to stay on track with her budget. Financial Coach is encouraging Brandy to monitor and adjust spending on eating out and personal care. Adjusting her spending in these areas will allow her to save more.

Brandy has a great deal of support from her mother. Brandy's mother is a recipient of public benefits. Brandy states she would love to break that cycle so that her son can see what financial success looks like and not be dependent on public benefits. She decided to put her short-term goals such as finding a better apartment and newer car on hold until she can build her savings to $2,000, which is the resource limit for individuals receiving SSI in Ohio (SSI/SSA 2204). See Figure 1: Brandy's Budget.

Interviewee #2 (Sandy)

Sandy is a 65-year-old widower that has been attempting to manage her finances since her husband died 4 years ago. Her husband was the primary provider for the family, and she did not work. Currently the only income she receives is social security. She is receiving her portion of social security as well as spousal benefits. She has some unpaid debt that her and her husband accumulated together that she is slowly paying off. Her goals are for financial stability, save for a better apartment, and pay off debt. Sandy was forced to sell the home she had with her husband due to not being able to afford the monthly payments. She currently lives in a senior subsidized housing facility. She would like to move to a better facility but is unable to afford it due to current rental costs. She receives public assistance benefits for housing. She also receives meals on wheels and Medicare. She decided not to work part-time currently due to the possibility of seeing a change in the housing assistance she receives.

Due to Sandy's fear of being homeless. Her family are always trying to get her to leave her current apartment and move in with them. She believes this is just so they can use her for the little income she has coming in. Even though she is aging and has some medical issues, she loves her independence and does not want to be a burden to her family. Her greatest financial challenge currently is that she needs to pay off debt to improve her credit. When her husband passed, they had accumulated a great deal of debt. Some of the debt she was not even aware of because her husband paid the bills.

Her automobile loan will be paid off by the end of 2024 and she is hoping that this will allow her to save more money to find a better apartment. She would like to live debt free so she can live comfortably and not worry about her finances, especially as she ages. She has $100 place in her savings each month and her greatest challenge is trying not to pull funds from her savings. Sandy has a spending habit of purchasing household items. She often finds herself needing to access funds in the savings to pay bills because she overspent on things she wants. She states she finds it helpful to be able to engage and meet with a financial coach who encourages her to live the life she desires but with control. She states the financial coach helps her manage her budget and control excessive spending. Sandy likes to get feedback and support for financial decisions she makes. She states she appreciates a coach that has a desire to see her succeed and provide her honest feedback.

Sandy is considering working part-time but is afraid that any additional income will cause her housing to increase. She believes the government need to step in and work with landlords to provide affordable housing. The housing costs are too high, and she feels she will never be able to improve her living conditions. Figure 2 shows Sandy's budget.

Interviewee #3 (Phyllis)

Phyllis is a single woman who lives with her adult disabled daughter. Both receive SSI and receive public benefits assistance for food, housing, and medical. Phyllis and daughter recently moved from a transitional housing facility for individuals that are homeless to permanent housing. Phyllis's mother, who was her caregiver, passed two years ago and she used alcohol to cope with the death of her mom and ended of being homeless. Phyllis would like to work, but do not have a high school diploma and she lacks job skills. She is a heavy smoker and any extra money she have often goes to buying cigarettes and snack foods.

Her daughter is the only family she has and they are each others support system. Her financial goal is for financial stability so she can maintain the apartment, save for emergencies, manage her spending, and build her credit so she can afford a better place to live in the future.

Phyllis receives $62 in food assistance, Medicaid for her medical needs, and her housing cost increased from $300 to $462.00. Both Phyllis and her daughter receive SSI benefits. Phyllis decided she would not work so she could help take care of her daughter. Also, if she works, she fears she will experience a reduction in her SSI income, housing, and food assistance. She currently has no credit and would like to start building credit so that she can have a better chance in the future of obtaining a better place to live.

Phyllis and her daughter split the cost of the rent which is $924.00 a month. Phyllis's daughter has a payee who controls her income. Phyllis's therapist suggests that she apply for a payee as well. The Financial Coach shared with Phyllis, the payee will be good because the payee will make sure all her needs are met, and she will have to follow a strict budget. The payee can help her budget for things she wants and build a savings. Phyllis currently has $79 auto deposited into her savings each month. However, she often spends the savings on miscellaneous items. The financial coach suggested that she try and keep at least $20 in her savings each month. The money she saves from the storage unit, which she no longer needs, can also help build her savings. The coach discussed ways she can build her credit, like a secured credit card. Phyllis fears a secure credit card because she believes she will misuse for stuff she wants and not necessarily need. Phyllis is hopeful for the future, especially now that she and her daughter are in permanent housing. Phyllis still does not wish to work because she feels she cannot afford a reduction in her SSI benefits housing, and food benefits.

Her greatest challenge currently is trusting people. Phyllis deals with depression, anxiety, and adult ADHD. Phyllis feels due to her limited education, mental health, and having a daughter that is disabled, she is not looked at seriously by others. She feels that society is not fair and the cost of living for a person with limited income is higher than a person who works. She appreciates working with the financial coach because she listens to her and assists her even with her limitations. In fact, Phyllis often gets overwhelmed with emotion because the financial coach cares and she believes the coach has her best interest in mind.

After reviewing Phyllis's budget, the financial coach informed Phyllis that she is doing a decent job in living within her means. The only concern is that any extra money she has goes towards her wants for cigarettes and snacks. Phyllis feels she needs the cigarettes and snacks to cope with the stresses of life. See figure 3 which shows Phyllis's budget.

Economic Impacts Affecting Benefits Cliff

Individuals in poverty know they need additional income and support but face many obstacles such as not having the required education to obtain a job that pays a living wage, limited skills, no work experience, the need to develop a resume, the need to build interview skills, fear of change, and the impact of inflation on the economy.

The benefits cliff is a major impact that low-income individuals face. In fact, due to the economy not only are the lower income individuals facing challenges, but even low-moderate to middle class individuals are experiencing challenges with meeting basic needs. A great deal of Americans is dealing with student loan debt, social security concerns due to increase in ageing Americans, and Work-force concerns.

In the state of Ohio, access to affordable housing is scarce and individuals feel they must do what is necessary to stay in their current living situation. They will avoid taking a promotion, limit their work hours, or even quit a job to avoid losing their housing benefits. In the state of Ohio, renters pay more than 30% of their income for housing. "28% of renter households are extremely low-income. There is a shortage of rental homes that are affordable and available for extremely low-income renters. $43,293 is the annual household income needed to afford a two-bedroom rental home at HUD's Fair Market Rent." Source: 2022 ACS PUMS. (nlihc.org, 2024).

Food costs are another area that inflation has impacted. Groceries are the greatest household expenses behind housing. "The significant moderation in food inflation since the start of 2023 is due to still-high wage inflation for grocery workers being offset by the retreat in commodity price" (Klitgaard, T. 2024).

"Food prices for all of us have gone way up since COVID, and $100 now buys about $65 worth of groceries compared to five years ago. According to a new report by the Federal Trade Commission, the largest grocery retailers — which include Walmart, Kroger, and Amazon, which owns Whole Foods — used the pandemic as an excuse to raise prices across the board." (Arias, S. 2024).

Childcare is another need that families with young children require for the adults in the household to work. Due to wage increases, the cost of childcare has increased. Childcare workers increased their service rates to $13 to $15 an hour on average. "The average annual cost for one infant's childcare in Ohio is $9,697 which is $808 per month! For $9,697 in annual childcare costs to be affordable (as defined by the U.S. Department of Health and Human Services), a family of three with two parents and one infant would need an annual income of $138,528. Put another way, two parents would have to each make $33.30 per hour working full time to make childcare affordable at the average rate, for just one infant" (Policy Matters Ohio 2024).

Bridge to Self-Sufficiency

Individuals are constantly overwhelmed with images of a successful life through social media, mindsets of friends and family, and society norms. The average person has no clue how to develop a budget, forecast for future needs, and save for emergencies when you always dealing with a crisis or lack of resources. The lack of financial preparedness is real. It requires a mind shift, support, and the ability to learn how to intentionally face your fears and obstacles.

"Self-sufficiency is the quality of feeling secure and content with oneself, a deep-rooted sense of inner completeness and stability" (Taylor, S. PH. D in an article of Psychology Today 2024). To become self-sufficient, one needs to learn how to manage their personal finances which may include creating a budget, creating a plan to building emergency savings, or creating a plan to pay off debt.

Let us consider this scenario:

1. This person felt very discouraged due to the loss of benefits and decided not to accept the job with the higher wage. Her children's safety and having quality childcare was more important than the opportunities that the increase in income can provide. The individuals put their dreams on hold and became more withdrawn because they felt like they had no control.
2. What if this individual is given the opportunity to apply for a deferment for her public benefits for a minimum of 6 months and max of 2 years to allow her time to obtain the skills and resources needed to become empowered and take control of her finances?

A deferment will allow the individual to provide documentation of a hardship or obstacle they are experiencing to avoid losing their public benefits. (Cambridge English Dictionary, 2024). This deferment process must include meeting with a financial coach to develop a self-sufficiency plan to determine the true needs the client has. The process should include reviewing their budget and developing a financially empowered plan to help them manage their finances within a certain time, which will be determined by collaborating with the financial coach. The plan is developed, and the individual will agree to the terms of a future benefits change. This is where Empowered Financial Coaching will take place, and the client will be empowered to take control of their finances.

A Pathway Forward

What support is needed for an individual to move from feeling disempowered to being empowered and cross the bridge of self-sufficiency to financial wellness? Also, what change is needed for the federal and state governments to recognize the significant concern.

Several states including the state of Ohio have increased the minimum wage, however, the increase in wages has created a shift in the economy, and the prices of goods and services have increased as well.

No one wants to feel they are alone in this world with all the challenges life can bring. "Assuming you will be happy with an exceptionally low income or choosing to work endless hours in pursuit of a high one, increases the odds that you will one day find yourself at a point of regret" (Housel, M. 2020). Individuals will adapt to their current situation and can only make a change when they are ready to make a change. They must feel hopeful for their future.

A coaching tool and method that focuses on empowering individuals to obtain the confidence and desire to reach their financial goals without judgement and shame is suggested, especially if they are challenged with decisions such as the benefits cliff. To move forward the individual may need to connect with someone that will coach them and encourage them to do what is best for themselves and their families and   Coaching should empower the individual to move forward and the take on a growth mindset.

Disempowerment, (Merriam Webster Dictionary 2024) refers to:

- Depriving someone of power, authority, or influence.
- Taking away someone's confidence and feeling of control over their life.
- Causing a person or group to be less likely to succeed.
- Preventing a person or group from having power, authority, or influence.

Empowered means (Merriam Dictionary 2024):

Having the knowledge, confidence, means, or ability to do things or make decisions for oneself. It refers to feeling confident and in control of one's life. It can also mean having the official authority or freedom to do something

Methodology

A coaching tool such as Simply. Coach (simply.coach.com 2024), can be used along with a focus on what EMPOWERED means for the individual to help them go from feeling disempowered to empowered. Below is a list of each letter in the word empowered and how this can encourage an individual. Being EMPOWERED is helpful in helping individuals successfully manage their personal finances.

E – Empathy

M –Mindset

P – Potential

O – Opportunity

W –Worthiness

E – Encouragement

R –Relevant

E -Education

D – Desires

Empathy - To start a conversation on such a personal matter such as finances, the person coaching the individual must be able to relate and show empathy. "This is essential to build trust. Ask open-ended questions to allow clients to share their stories with you. Show that you care. The coach should work on any biases they may have to work with the individuals" (Cherry, K. 2024).

Mindset - Help the individual determine what is their mindset regarding their finances. What are their beliefs regarding money and determination if they are willing to learn and shift their mindset. Do money assessments such as CFPB Well-being scale (consumerfinance.gov 2024), and/or Money Habitudes (www.moneyhabitudes.com [2024)].

Potential - Help the individual realize they have potential to change (Oxfordlearnersdictionaries.com 2024) and take the baby steps needed to move them closer to reaching their goals. This helps them see that the goal is reachable.

Opportunity: Identify the opportunities that are available for the client. Research and share resources and tools that can help the individual achieve what they are looking to achieve. Help the individual forecast for the future. (Cambridge Dictionary 2024).

Worthiness - Help the individual feel worthy and know that they can do what they set their mind to with patience and time. (Merriam-Webster 2024)

Encouragement – "We need encouragement from others but also from ourselves to move forward." (Engel, B. 2018).

Relevant – Goals should be necessary and make sense. Follow the SMART goals model. (Smart Goals 2024)

Education – "Be willing and open to learn new concepts and methods to grow in every aspect of your life including finances" (Silver, C. 2024).

Desire – "Personal growth is a desire that everyone should have to reach their full potential. A coach can help a personal define their desires and create a plan accordingly" (Sasson , R. 2024).

Opportunity for Improvement

In Ohio, a client that receives cash assistance and/or food assistance is encouraged to complete a Self-Sufficiency contract. (ohio.gov, 2024). This is necessary for individuals to know the effect that an increase in income will have on the person's benefits and how this will be enforced. This policy was implemented in 2018 and does appear to be enforced.

A suggested improvement to this process should be that along with requiring the individual to read and sign that they understand the Self-Sufficiency contract, they meet with a financial coach that will help them create a plan to reach financial freedom. Also, another opportunity for improvement is for the federal and state governments to review the requirements and guidelines and add flexibility due to current economy and documented current challenges the individual is facing. This should also be a requirement for individuals that request a deferment.

Ohio (H 33, 2023) requires the Department of Job and Family services to establish a two-year benefit bridge employer pilot program to award grants to eligible Ohio employers to incentivize employees enrolled in SNAP. TANF, Medicaid or a publicly funded childcare program to complete job training (NCSL 2024). This program should be extended, especially since the current economy is still unstable there continue to be a huge need for federal government and state officials to work on a plan to deal with the benefits cliff. This is a fantastic opportunity for state governments to collaborate and intentionally partner with employers to offer employment opportunities to combat the effects of poverty and help individuals deal with the benefits cliff.

Conclusion

There are two opportunities that may work to improve the situation. One is advocacy for change regarding public assistance benefits and for government to realistically analyze the cost of living by state. This includes the individual being empowered to advocate for themselves. Secondly, preparing individuals for the effect of a benefits cliff by requiring the individual to work with a financial coach to establish a working plan to help them meet their financial goals. Ohio Jobs and Family Services on October 1, 2024, announced a Sliding Scale that will be used for individuals dealing with the benefits cliff when in comes to SNAP Benefits. (Ohio JFS 2024).

All Americans deserve and desire to live a comfortable life. Individuals want to live a lifestyle of their choice without added burdens such as government assistance programs that need to be more flexible based on the needs of the individuals it serves. America government should care for the economic well-being of all its citizens. It is important that we recognize the need to change a public assistance system that is no longer working to help individuals move forward and cross the bridge from feeling disempowered to empowered and realize the financial freedom that we all desire. “We must care less about ourselves and more for others with empathy and compassion to build healthy and growing communities” (Vasquez, R. 2023).

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SIMPLE BUDGET WORKSHEET

NAME: _Brandy____________________
DATE: ___1/2024____________________

INCOME	AMOUNTS
Wages (Net Income)	$1,354.50
BENEFITS:	
SSI	$1,349.00
Childcare Voucher - $150 a week	$600.00
Food Assistance (Monthly)	$150.00
______________________________	
TOTAL INCOME:	$3,453.50

SUMMARY	TOTALS
TOTAL INCOME	$3,453.50
TOTAL EXPENSES	$3,270.32
NET INCOME: (SURPLUS/DEFICIT)	$183.18

FIXED EXPENSES:	AMOUNTS
RENT	$775.00
CAR PAYMENT	
CAR INSURANCE	$180.00
STUDENT LOANS	
INTERNET/CABLE	$74.00
CELL PHONE	$161.00
CHILDCARE	$600.00
SAVINGS - *AUTO DEPOSIT*	$200.00
STREAMING/SUBSCRIPTIONS	$25.00
OTHER LOANS/EXPENSES:	
______________________________	
______________________________	
TOTAL FIXED EXPENSES	$2,015.00

VARIABLE EXPENSES:	AMOUNTS
UTILITIES	$200.32
GAS/FUEL	$100.00
CAR MAINTENANCE	$50.00
GROCERIES	$200.00
PERSONAL ITEMS:	
TOBACCO/ALCOHOL	$25.00
CLOTHING	$100.00
MEDICATION	
TOILETRIES/BEAUTY	$150.00
HOUSEHOLD ITEMS	$130.00
DINING -EAT OUT	$200.00
ENTERTAINMENT/FUN MONEY	
OTHER VARIABLE EXPENSES:	
_____________________________	
_____________________________	
_____________________________	
TOTAL VARIABLE EXPENSES	$1,155.32

DEBT	AMOUNTS
COLLECTIONS/OLD DEBT	
CREDIT CARDS	$100.00
PERSONAL LOANS	
TOTAL DEBT	$100.00
TOTAL EXPENSES	**$3,270.32**

Figure 1

SIMPLE BUDGET WORKSHEET

NAME: _Sandy____________________
DATE: ___1/2024____________________

INCOME	AMOUNTS
Wages (Net Income)	
BENEFITS:	
Social Security	$2,088.00
______________________________	
TOTAL INCOME:	$2,088.00

SUMMARY	TOTALS
TOTAL INCOME	$2,088.00
TOTAL EXPENSES	$2,066.00
NET INCOME: (SURPLUS/DEFICIT)	$22.00

FIXED EXPENSES:	AMOUNTS
RENT	$630.00
CAR PAYMENT	$220.00
CAR INSURANCE	$114.00
STUDENT LOANS	
INTERNET/CABLE	$30.00
CELL PHONE	$27.00
CHILDCARE	
SAVINGS - *AUTO DEPOSIT*	$100.00
STREAMING/SUBSCRIPTIONS	
OTHER LOANS/EXPENSES:	
Tithes	$210.00
______________________________	
TOTAL FIXED EXPENSES	$1,331.00

VARIABLE EXPENSES:	AMOUNTS
UTILITIES	$0.00
GAS/FUEL	$100.00
CAR MAINTENANCE	$0.00
GROCERIES	$100.00
PERSONAL ITEMS:	
TOBACCO/ALCOHOL	
CLOTHING	$25.00
MEDICATION	$27.00
TOILETRIES/BEAUTY	$35.00
HOUSEHOLD ITEMS	$30.00
DINING -EAT OUT	$40.00
ENTERTAINMENT/FUN MONEY	
OTHER VARIABLE EXPENSES:	
Help Family Members	$100.00
_____________________________	
_____________________________	
TOTAL VARIABLE EXPENSES	$457.00

DEBT	AMOUNTS
COLLECTIONS/OLD DEBT	$50.00
CREDIT CARDS	$100.00
PERSONAL LOANS	$128.00
TOTAL DEBT	$278.00
TOTAL EXPENSES	**$2,066.00**

Figure 2

SIMPLE BUDGET WORKSHEET

NAME: _Phyllis_____________________
Date: July 2024

INCOME	AMOUNTS
Wages (Net Income)	
BENEFITS:	
SSI	$943.00
Food Assistance	$67.00
______________________________	
TOTAL INCOME:	$1,010.00

SUMMARY	TOTALS
TOTAL INCOME	$1,010.00
TOTAL EXPENSES	$963.14
NET INCOME: (SURPLUS/DEFICIT)	$46.86

FIXED EXPENSES:	AMOUNTS
RENT	$462.00
CAR PAYMENT	
CAR INSURANCE	
STUDENT LOANS	
INTERNET/CABLE	$30.00
CELL PHONE	$55.50
CHILDCARE	
SAVINGS - *AUTO DEPOSIT*	$79.00
STREAMING/SUBSCRIPTIONS	
OTHER LOANS/EXPENSES:	
Public Transporation	$30.00
Life Insurance	$35.00
Storage	$71.64
TOTAL FIXED EXPENSES	$763.14

VARIABLE EXPENSES:	AMOUNTS
UTILITIES	$0.00
GAS/FUEL	
CAR MAINTENANCE	$0.00
GROCERIES	$100.00
PERSONAL ITEMS:	
TOBACCO/ALCOHOL	$20.00
CLOTHING	
MEDICATION	
TOILETRIES/BEAUTY	
HOUSEHOLD ITEMS	$10.00
DINING -EAT OUT (Snacks)	$20.00
ENTERTAINMENT/FUN MONEY	
OTHER VARIABLE EXPENSES:	
_____________________________	
_____________________________	
TOTAL VARIABLE EXPENSES	$150.00

DEBT	AMOUNTS
COLLECTIONS/OLD DEBT	
CREDIT CARDS	
Owe Family Members	$50.00
TOTAL DEBT	$50.00
TOTAL EXPENSES	**$963.14**

Figure 3

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Worldview Conviction is a Missing Piece in Financial Well-Being

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Abstract

This paper introduces a novel and potentially essential financial well-being variable—worldview conviction—for financial professionals, researchers, and policymakers to more accurately predict an individual's financial well-being. Using the results from a sample of 492 participants, this paper finds evidence that having convictions about how life works (i.e., personal worldview) predicts financial well-being indirectly through an individual's aspirational life goals (i.e., values). More specifically, evidence was found that higher levels of conviction in a personal worldview predicted more intrinsic values. And intrinsic value types (goals related to personal growth, deeper relationships, or community contribution) were found to be associated with higher financial well-being while extrinsic value types (goals related to acquiring wealth, fame, or image) were found to be associated with lower financial well-being.

Keywords: Financial goals, Financial well-being, Integrative Worldview Framework, Self-Determination Theory, Worldviews.

Worldview conviction is a missing piece in financial well-being.

This paper follows up on the research agenda proposed by Enete (2024) for how worldviews impact financial attitudes and behaviors. Enete (2024) used Self Determination Theory (SDT) and prior literature to develop a series of propositions related to how individual values and personal worldviews should help predict financial well-being. Personal worldviews can be defined as "'ways of life' or 'visions of life,' for how humans live out their beliefs and values" (Valk, 2009, p. 70). Values can be defined as "beliefs about desirable or undesirable ways of behaving or about the desirability or otherwise of general goals" (Rohan, 2000, p. 257). Prior literature has shown that a personal worldview helps provide the foundation for an individual's values (Magee, 2014; McDowell, 2024) and that "people's worldviews directly evidence their personal value systems" (Rohan, 2000, p. 269).

Given the theoretical connection presented in Enete (2024) between personal worldviews, values, and financial well-being, and using their suggested operationalized approach, this paper will empirically test the relationship between personal worldviews, values, and financial well-being. Using prior literature and SDT, this paper predicts that personal worldviews are associated with financial well-being indirectly through values.

This paper will contribute to existing literature by being the first to empirically explore the relationship between personal worldviews, values, and financial well-being. This is an important research question given that financial well-being has been identified as the "missing piece in holistic wellbeing" (Jaggar and Navlakhi, 2021). Improving the prediction of financial well-being would be a very good step towards alleviating cultural problems related to poor financial well-being, including financial anxiety, which the American Psychiatric Association (APA) found was recently at its highest recorded level since 2015 (APA, 2022).

In addition, results of this paper could potentially motivate development and testing of a financial well-being intervention tool that would increase an individual's financial well-being through helping them identify their personal worldview, which would indirectly improve their financial well-being as they move more towards more intrinsically-held value types that meet their psychological needs (e.g., deeper relationships, personal growth, community contribution), and farther away from extrinsic value types that do not meet their psychological needs (e.g., wealth, fame, image).

Literature Review

Worldviews

The term *worldview* can be traced back to the German word, *Weltanschauung*, which means "philosophy of life" or "world picture" (Magee, 2014). When using the term in modern research, a worldview can be defined as a "set of beliefs about physical and social reality that shapes the way a person perceives and interprets the world" (Magee, 2014, p. 4). While some individuals may argue that discussing "philosophy of life" is incompatible when discussing finances and financial goals, it is the other way around. This paper will argue that it is incompatible to discuss finances and financial goals without discussing worldviews since worldviews help people "make meaning" in their life (Hedlund-de Witt, 2012) and it would be a great omission if the meaning-making systems of people were left out of a discussion of what kind of life an individual wants to live. Another great attribute of worldviews is that everyone has one, whereas, categorizing an individual's "philosophy of life" using the language of religion excludes large bodies of people who are said to be "not religious."

Personal worldview was found by De Witt et al. (2016) to be a significant variable in when predicting many types of opinions, political positions, and behaviors. For example, his study found that a participant's worldview was able to explain more variation in behaviors around earth care than scientific literacy. Holbrook et al. (2011), on the other hand, defined 'worldview defense' (WDT) as "the polarization of ratings for pleasant and against aversive cultural attitudes." (p. 3). When individuals sense that their worldview is being threatened, whether from a stock market crash or a financial planner telling them they need to "save more" or "spend less," WDT often causes participants to "unconsciously double-down on their in-group affiliations, often through exaggerated displays of loyalty" (Fabian et al., 2022, p. 148). Jonas and Fischer (2006) found that WDT was reduced if intrinsic beliefs were affirmed.

Values

Rohan (2000) looked at how prior literature defined values, finding a wide variety in definitions, and an important distinction between whether value was defined as a verb or noun. If a verb, *value* refers to "ascertaining the merit of an entity with reference to an abstract value system structure" (p. 258). If *value* refers to a noun, it is not the process of finding merit, but the result of the process. Rohan (2000) went on to propose that all humans "have a *value system* [emphasis added] that contains a finite number of universally important *value types* [emphasis added] but differ in terms of the relative importance they place on each of these value types" (p. 262).

Within this idea of *value types*, Schwartz (1992) engaged in a cross-cultural study that sought to identify why type of value types would be universal across different cultures. All value types should be in response to three universal requirements of human existence: biological, social, and group survival. Given these parameters, Schwartz developed a circumplex model of values. This model mapped the relations among motivational types of values, higher order value types, and bipolar value dimensions. The value types were categorized as either self-transcendent or self-enhancement. The self-transcendent value types included self-direction, universalism, benevolence, and conformity/tradition. The self-enhancement value types included stimulation, hedonism, achievement, power, and security.

Grouzet et al. (2005) built on this original circumplex model of values, using a multidimensional scaling (MDS) analysis to create their own circumplex model of values that would capture the variation of life goals of undergraduate participants across 15 different cultures. 11 value types were identified through this study (see Figure 1). These 11 value types were categorized as either self-transcendent or physical self. In addition, all value types were categorized as either intrinsic (i.e., internalized motivation) or extrinsic (i.e., externally adopted).

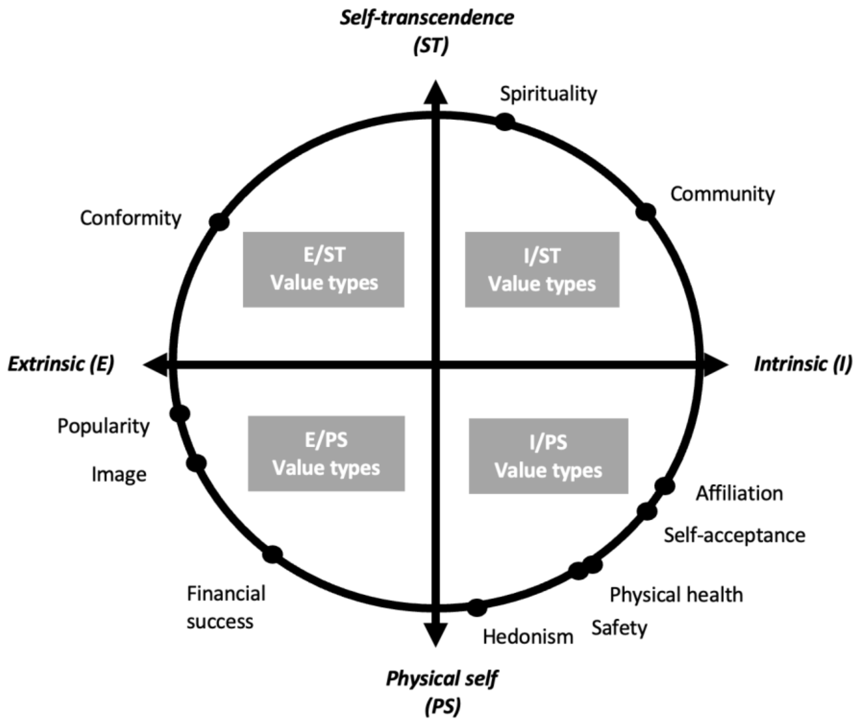
Categorizing goals as either intrinsic or extrinsic borrows from Self Determination Theory (SDT) which predicts that individuals are only motivated to achieve goals to the degree that they fulfill their three basic psychological needs of autonomy, relatedness, and competence (Deci and Ryan, 2000). When a value type is said to be extrinsic, it is a value type that consists of life goals that were simply given to them externally and have not been internalized at all. If a motivation, or value type, is purely external it will not meet their core psychological needs (autonomy, relatedness, and competence), thus resulting in low motivation to achieve the life goals associated with that value type. This is known as "amotivation."

By comparison, a fully internalized value type is predicted by SDT to consist of life goals that meet an individual's core psychological needs, resulting in a high motivation to achieve their goal. For example, if an individual has a value type for "image," one important life goal they likely marked as highly important is that: "I will successfully hide the signs of aging" (Costa et al., 2020). This type of life goal is extrinsic to that individual (largely given to them from outside culture) since it strongly does not meet an individual's core psychological needs of autonomy, relatedness, and competence.

By contrast, if an individual has a value type for "community," one important life goal they likely marked as highly important is that: "I will assist people who need it, asking nothing in return" (Costa et al., 2020). This type of life goal is intrinsic to that individual (largely a motivation that will come from within) since it does strongly meet an individual's core psychological needs of autonomy, relatedness, and competence. See Figure 1 for a visual conception of the circumplex model of values.

Figure 1

Circumplex model of values



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Financial Well-being

Prior literature has defined financial well-being as "the perception of being able to sustain current and anticipated desired living standards and financial freedom" (Brüggen et al., 2017, p. 7) or "a state of being wherein a person can fully meet current and ongoing financial obligations, can feel secure in their financial future and is able to make choices that allow them to enjoy life" (CFPB, 2017).

It is common for any discussion of financial well-being to pair with escaping poverty (Iramani and Lutfi, 2020). Bashir and Qureshi (2023) conducted a systematic literature review (SLR) of 447 research records using the word financial well-being and found that financial well-being was mostly studied with the following keywords: poverty, behavior, income, health, and growth. The SLR study found that financial well-being was a time-oriented concept with the following dimensions: subjective well-being, relative assessment (assessment changes relative to a person's social response group and personal life goals), time duration (fulfill current and potential financial obligations within a time situation that is dynamic and changes over time), and financial security/freedom (having enough money left-over for non-essentials to live your life).

Brüggen et al. (2017) argued that financial education influenced financial behavior, which is what impacts financial well-being. Other factors that have been shown to influence financial well-being include financial status, financial experience, self-control, demographic factors (marital status, number of dependents), and locus of control (Iramani and Lutfi, 2020).

Structural Model and Hypotheses

This paper predicts that a personal worldview will influence an individual's value type because personal worldviews are what help determine the core assumptions of an individual (Magee, 2014). Rohan (2000) argued that "people's worldviews directly evidence their personal value systems" (p. 269). Valk (2009) argued that personal worldviews are as much "'ways of life' as they are 'visions of life', for how humans live out their beliefs and values [emphasizes added]" (p. 70). Because of the inter-related nature of personal worldviews and values, Czerniawska and Szydło (2020) found these two topics to be commonly discussed together.

Lekes et al. (2012) used an experimental design to show that participants who simply reflected on the difference between intrinsic values (e.g., having close relationships) and extrinsic values (e.g., being popular) moved towards more intrinsic adoption of values and greater well-being. A strong belief in a worldview statement (i.e., high worldview conviction) strongly relates to the SDT concept of autonomy, which is defined as "the individual's ability to act and pursue goals coherent with one's own internalized beliefs and values" (Vail et al., 2020). This paper predicts that the stronger the participant agrees to a personal worldview statement, the more likely they will be associated with value types associated with greater autonomy, namely, an intrinsic value type.

Given that values are "beliefs about…the desirability of general goals," (Rohan, 2000, p. 257), financial well-being should be influenced by values since all goals tend to have a financial component. Nye and Hillyard (2013) found that personal values help to predict financial behavior. Danes and Haberman (2007) argued that "family history, experience, and skills, as well as the beliefs and values of each distinctive family member, inform their construction of finances" (p. 50).

Within an individual's value type, extrinsic value types are predicted by SDT to be associated with lower motivation because they do not adequately meet the three basic psychological needs of an individual of autonomy, relatedness, and competence (Deci and Ryan, 2000). The extrinsic value types of 'financial success,' 'image,' and 'status' have been shown to be associated with lower well-being (Kasser, 2011a), which is a key aspect of financial well-being given that all components of well-being (physical health, capital, social and financial capital) are inter-connected (Zemtsov and Osipova, 2016).

Prior research has shown that participants who have extrinsic value types are less likely to help people in need (Vohs et al., 2006) and more likely to be engage in ecologically destructive practices. One study found that the more participants placed priority on financial success over other life priorities, the more likely they experience a decrease in their well-being (Kasser et al., 2011). Given these results from prior literature and the predictions of SDT, extrinsic value types are predicted by this paper to be associated with lower financial well-being.

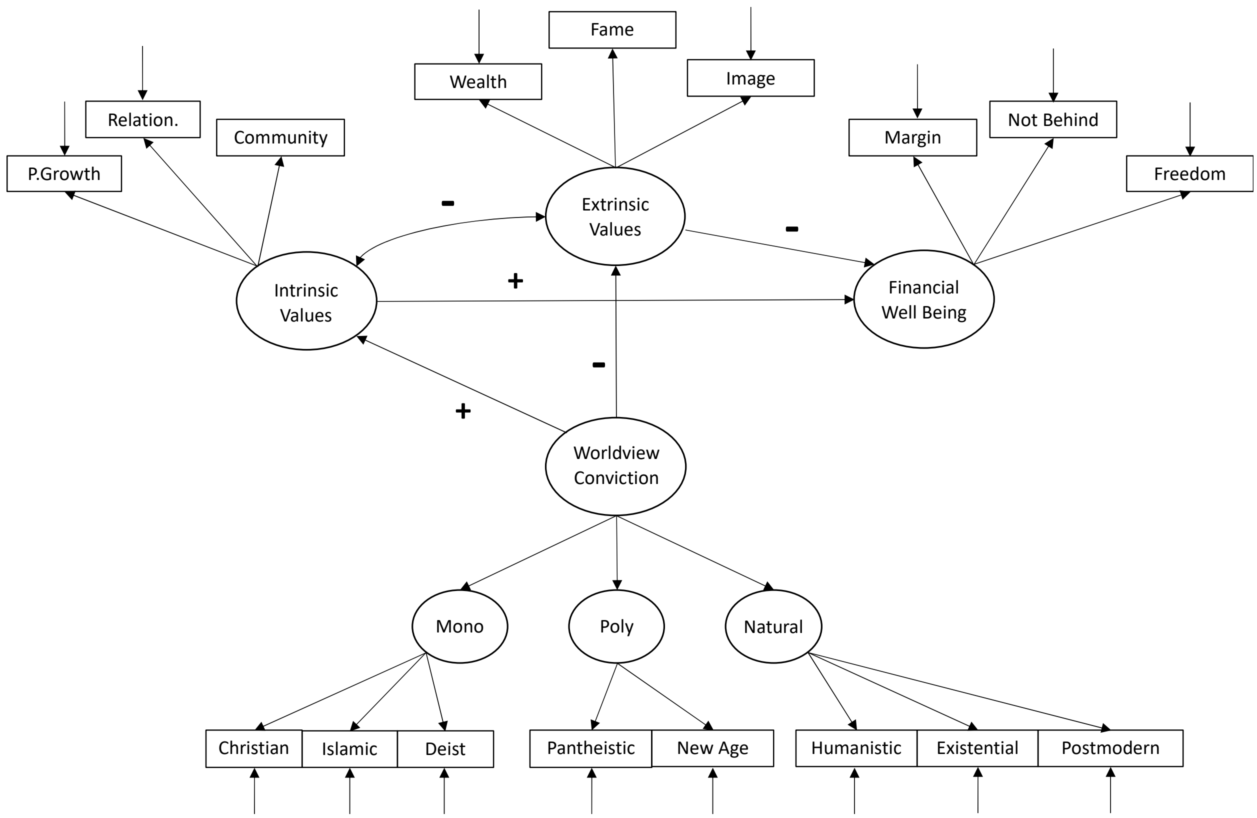
Intrinsic value types are predicted by SDT to be associated with higher motivation because they meet the three basic psychological needs of an individual of autonomy, relatedness, and competence (Deci and Ryan, 2000). Fishbach and Woolley (2022) found that goals that are intrinsically held are more likely to be associated with higher motivation and goal attainment, which are key aspects of financial well-being to the degree that they influence self-control and locus of control (Iramani and Lutfi, 2020). Kasser (2002) found that participants who identified with intrinsic, self-transcendent value types (I/ST) reported higher personal well-being, lower depression, and lower anxiety, which relate to financial well-being given that the negative emotions of anxiety and sadness have been shown to be associated with lower financial resources (Enete, 2022). Given these results from prior literature and the predictions of SDT, intrinsic value types are predicted by this paper to be associated with higher financial well-being.

Since intrinsic and extrinsic value types are predicted to have different associations with financial well-being, extrinsic value types will be modeled separately from intrinsic value types. The following four hypotheses lead to the structural model found in Figure 2.

H1: Stronger personal worldview conviction predicts stronger intrinsic value types.
H2: Stronger personal worldview conviction predicts weaker extrinsic value types.
H3: Stronger extrinsic value types predicts lower financial well-being.
H4:Stronger intrinsic value types predicts higher financial well-being.

Figure 2

Proposed Measurement and Structural Regression Paths



Note. P.Growth = Personal Growth; Relation. = Relationships; Mono = Monotheism; Polytheism. Ovals represent latent variables while rectangles represent observed variables (i.e., indicators).

Methods

Data Collection

This study used survey data collected during March 2024 with [Masked for Blind Review] IRB approval. The dataset was funded and supported by the provost office of [Masked for Blind Review]. Participants of the survey were recruited through the Prolific platform, which provided a nationally representative pool of U.S.-based survey respondents. To qualify for the survey, participants from Prolific needed to be 18 years or older and located in the United States. Once U.S. survey participants selected to participate in the survey through Prolific, they were sent to Qualtrics, which administered the survey and collected the data. After the survey participants completed the survey, the results were reviewed, and they were sent compensation of $4.50. To mitigate the risk of automated bots, a picture CAPTCHA question was added as well as a honeypot question (Storozuk et al., 2020). The survey initially collected survey results from 604 participants. From this initial survey size, 13 questions failed the CAPTCHA question given a score of less than 0.5 (Google, 2024), 15 questions failed the honeypot question, and 94 observations were discarded to improve data quality given that they were the lowest quintile of duration among participants (less than 720 seconds). Given these changes, the ending survey size used in this paper is 492 observations.

Outcome Variable

Financial well-being

Prior literature has measured financial well-being using both subjective (e.g., financial self-efficacy and financial satisfaction) and objective measures (e.g., budgeting success, debt load; Brüggen et al., 2017; CFPB, 2023). A systematic literature review (SLR) of 133 publications measuring financial well-being found that these studies mostly used subjective measures and often focused on studying antecedents of financial well-being (Bashir and Qureshi, 2023).

The federal Consumer Financial Protection Bureau (CFPB) in the United States introduced a financial well-being scale during 2015. This scale was developed using qualitative interviews and focus groups and ended up capturing feelings around four components of an individual's financial life: (1) control over day-to-day, month-to-month finances; (2) the capacity to absorb a financial shock; (3) being on track to meet financial goals; and (4) having the financial freedom to make the choices that allow for the enjoyment of life (Collins and Urban, 2021).

This paper will measure financial well-being using the following three questions from the CFPB financial well-being scale (see Table 1). These three questions captured the CFPB financial well-being core concepts of financial control, capacity, and freedom while also creating the greatest possible model fit during the Confirmatory Factor Analysis (CFA) of the financial well-being latent variable (see section 5.2 for more details).

Table 1
Financial Well-Being Latent Variable

Variable	Measurement Question	Values
Margin	"I have money left over at the end of the month."	This statement applies to me: (4) Always, (3) Often, (2) Sometimes, (1) Rarely, (0) Never.
Not Behind	"I am behind with my finances."	This statement applies to me: (4) Always, (3) Often, (2) Sometimes, (1) Rarely, (0) Never.
Freedom	"My finances control my life."	This statement applies to me: (4) Always, (3) Often, (2) Sometimes, (1) Rarely, (0) Never.

Note. Variables "Not Behind" and "Freedom" were reverse coded (4=0, 3=1,2 = 2, 1=3, 0=4).

Predictor Variables
Values
To measure value types of individuals, the Aspiration Index was used (Kasser and Ryan, 1993). For this scale, there are seven categories of aspirations with five specific items within each category (see Table 2 below). The seven categories include: the extrinsic aspirations of wealth, fame, and image; the intrinsic aspirations of meaningful relationships, personal growth, and community contributions; and the aspiration of good health which this paper did not use since it has not been shown to be clearly extrinsic or intrinsic. For each life goal, participants rate: (1) the importance to themselves of each aspiration, (2) their beliefs about the likelihood of attaining each, and (3) the degree to which they have already attained each.

In this study, value scales were created by adding up the three questions associated with the five questions of each value type (fame, image, meaningful relationships, personal growth, and community contributions). However, for the wealth value scale, only the first rating was used, "How important is this to you" when adding up the five-question score. The two follow-up questions of "How likely is it that this will happen in your future?" and "How much have you already attained this goal?" are questions that speak directly to financial well-being and would be too collinear with the study's dependent variable. However, the first question about rating the importance of wealth is fundamentally a value concept that does not directly measure financial well-being.

Table 2
Aspiration Index

Value Type	Life-Goal
personal growth	To grow and learn new things.
personal growth	At the end of my life, to be able to look back on my life as meaningful and complete.
personal growth	To choose what I do, instead of being pushed along by life.
personal growth	To know and accept who I really am.
personal growth	To gain increasing insight into why I do the things I do.
relationships	To have good friends that I can count on.
relationships	To share my life with someone I love.
relationships	To have committed, intimate relationships.
relationships	To feel that there are people who really love me, and whom I love.
relationships	To have deep enduring relationships.
community	To work for the betterment of society.
community	To assist people who need it, asking nothing in return.
community	To work to make the world a better place.
community	To help others improve their lives.
community	To help people in need.
wealth	To have many expensive possessions.
wealth	To be financially successful.
wealth	To be rich.
wealth	To have enough money to buy everything I want.
wealth	To be a very wealthy person.
fame	To have my name known by many people.
fame	To be admired by many people.
fame	To be famous.
fame	To have my name appear frequently in the media.
fame	To be admired by lots of different people.
image	To successfully hide the signs of aging.
image	To have people comment often about how attractive I look.
image	To keep up with fashions in hair and clothing.
image	To achieve the "look" I've been after.
image	To have an image that others find appealing.

Worldview conviction

Worldviews can be characterized as *organized* versus *personal*. Personal worldviews are sourced from organized worldviews (Van der Kooij et al., 2017). An organized worldview is connected to an established system with traditions, values, rituals, ideals, or dogmas (Van der Kooij, 2017). Prior literature has categorized four primary organized worldviews as Traditional (universe is purposively constructed), Modern (secular materialism), Postmodern (reality is pluralistic), and Integrative (universe is evolving; De Witt et al. (2016)) or Theism (one personal God as Creator/Ruler), Naturalism/Materialism (only material world exists), Pantheism (God is in everything), and Deism (one Creator/Ruler God who is not personal; Bhawanie (2018)).

Sire (2020), in his seventh edition, attempts to catalogue all the major organized worldviews that are broadly practiced in the United States. His worldview categories will be used for this paper since the predictions of this paper are for the average U.S. resident. Sire (2020)'s eight distinct worldviews include: Christian Theism, Deism, Naturalism, Moralistic Therapeutic Deism, Nihilistic Postmodern Naturalism, Eastern Pantheism, New Age, and Islamic Theism. "Moralistic Therapeutic Deism" is a relatively newly identified organized worldview that was found by Smith and Denton (2009) as the primary worldview practiced by the American teenagers. Please note that Eastern Pantheism is a highly diverse organized worldview, and the operationalization of this worldview is meant to capture how Sire (2020) argued that it is practiced in the U.S., and not in other parts of the world.

Given these categories of organized worldviews, an individual can "map" their personal worldview using a worldview mapping tool. Hedlund-de Witt (2012) developed the theoretical Integrative Worldview Framework

(IWF) as a useful way to map organized worldviews into five worldview-aspects. These aspects include: Ontology (the study of the nature of reality), Epistemology (the study of knowledge), Axiology (the study of the nature of the good life as it relates to morals, ethics, and aesthetic values), Anthropology (the study of human nature and behavior) and Societal vision (a perspective on how society should be organized and how societal problems and issues should be addressed). See Table S1 for an example of doing a IWF mapping of the major worldviews of the U.S. per Sire (2020), as cited in Enete (2024).

For this study, three of the five aspects were used to measure an individual's level of worldview conviction (prime reality, material resources, and the good life). All five aspects were not used in the data collection survey to limit the cognitive load of the survey participants. The three aspects selected were meant to represent the three most intellectually accessible concepts for an average English speaker to comprehend. Aspects around the acquisition of knowledge, human nature, and societal vision were perceived as bearing a heavier cognitive load than aspects around prime reality, material resources, and the good life. See Table 3 for all the worldview statements that were presented to participants. For each worldview statement, participants were asked to rate their level of conviction:

"Not true (1); probably not true (2); not sure (3); Somewhat true (statement needs to be modified, but it is not too far off from what I believe is true) (4); probably true (5); true (6); absolutely true (7)"

Because this paper is measuring worldview conviction, equal weight was given to participants who selected "not true" and "true." In addition, participants who wanted to qualify the statement by selecting that the statement "needs to be modified but is not too far off from what I believe to be true" were given an equal weight as "true" since they had enough conviction to qualify the statement and have a conviction that is not too far off. See below for how this question was re-coded.

0 = not sure (3)
1 = probably not true (2) or probably true (5)
2 = not true (1) or somewhat true (4) or true (6)
3 = absolutely true (7)

Table 3
Measurement of Worldview Conviction

Organized Worldview	Statement
	What is true about reality?
Christian Theism	God is infinite, all powerful, triune, and wants to have a personal relationship with created people.
Islamic Theism	Allah is infinite, all powerful, ever-present to us, knows everything, and good.
Moralistic Therapeutic Deism	God exists and is somewhat personal, but His primary job after making people is to make sure people are happy.
Eastern Pantheism	The soul of every human being is the Soul of the cosmos. There exists a oneness behind all distinctions of space and time, good and evil, illusion and reality.
New Age	Self is the prime reality. Self is the cosmos. Self is God.
Humanism	Physical material is all that exists and exists eternally.
Existentialism	A human's subjective reality allows them an inner awareness that brings about freedom from the absurdity of reality, which they are forced to live in.
Postmodernism	Language makes meaning. There is no meaning apart from people saying that their adopted metanarratives are meaningful.
	What is the good life?
Christian Theism	The good life is to glorify God and to enjoy him forever.
Islamic Theism	The good life is submission to Allah in all areas of life.
Moralistic Therapeutic Deism	The good life is to be happy.
Eastern Pantheism	The good life is to return to one's origin in the infinite-impersonal One.
New Age	The good life is to realize your own individual unity with the cosmos. To fashion the cosmos in your own image.
Humanism	The good life is to determine your own destiny.
Existentialism	The good life is to be fully committed to being yourself and living authentically.
Postmodernism	The good life is to learn to fashion and use language that will get each person what he or she wants. And in so doing, have individual freedom to maximize pleasure.
	What is the nature of material resources?
Christian Theism	Resources are abundant when managed according to God's character of love and service. Man is meant to steward their God-given resources as a calling, for God's glory.
Islamic Theism	Allah made the material world and has full control over it. How followers steward Allah's possessions are an important test to determine whether they are worthy to be in heaven with Him.
Moralistic Therapeutic Deism	God made the material world for a person's enjoyment. While the world appears to be governed by the laws of scarcity, God's true intention in creating the world is to provide for His creation all that is needed for them to be happy.
Eastern Pantheism	The material world is an illusion; something to overcome through transcendent meditation. Wealth and economic class are distinctions that do not exist with the One.
New Age	The material world is only valuable if it facilitates a gateway towards self enhancement.
Humanism	Humans have evolved from the material world. Having material resources is the key to human's survival, but, unfortunately, humans are governed by unlimited wants and limited means.

Existentialism	The material, objective world is absurd and meaningless. You must create value through your decision to be yourself.
Postmodernism	Material resources are only good if you make them good. Generating wealth is a key part towards achieving individual freedom from culture's metanarratives since it lets you have more independence from any people/institutions of power.

Covariate variables
The following traditional socio-economic and demographic control variables are used in this analysis (see Table 4). These control variables of age, education, family size, marital status, and sex have all been established before as explanatory variables for predicting financial well-being (Bashir and Qureshi, 2023)

Table 4
Measurement of Control Variables

Variable	Measurement Question	Values
Age	What is your current age?	Numeric blank
Education	What was the highest level of education that you completed?	Less than High School Education (0), High School Diploma (1), Some college/associate degree/Trade school (2), bachelor's degree (3), More than bachelor's degree (4)
Family size	How many children do you have?	0 (0), 1 (1), 2 (2), 3 (3), 4 (4), more than 5 (5)
Marital status	What is your marital status?	Currently married (1), not currently married (0)
Sex	What is your gender?	Female (1), Male (0)

Note. Because of the small sample size ($n = 8$), participants who indicated 'Other' for the Sex variable were not included in the control variable for Sex

Data Analysis
The relationship between personal worldview conviction, values, and financial well-being is tested with a Structural Equation Model (SEM) using R statistical software (v.4.3.2; R Core Team, 2023) and R studio (v. 2023.12.1+402; RStudio Team, 2023). The following packages were utilized in this study: dplyr for recoding variables (Wickham et al., 2022), MVN for examining the multivariate normality assumption (Korkmaz et al., 2014), and lavaan for conducting the SEM analysis (Rosseel, 2012).

Mardia's (1970) tests suggested statistically significant skewness and kurtosis values for the multivariate distribution of the variables. Similarly, Henze-Zirkler's (1990), Royston's (1992), and Doornick and Hansen's (2008) tests for multivariate normality suggested that the data was not multivariate normal (ps < .05). Visual inspection of the QQ-plot suggested that the multivariate distribution deviated from normality at higher levels of squared Mahalanobis Distance values. This evidence suggested the need for utilizing an estimation that was robust towards violations of multivariate normality. Consequently, a Robust Maximum Likelihood (MLR) estimator was used to estimate the measurement and structural parameters for this study.

Global Fit Indices and Localized Areas of Strain
The chi-square test (χ^2), comparative fit index (CFI), Tucker-Lewis Index, and root mean-squared error of approximation (RMSEA) indices were used to assess global model fit. Model fit statistics and acceptable fit criteria are provided in Table 7. Standardized and correlation residuals were examined to identify any localized areas of strain in the reproduced variance-covariance matrix. Standardized residuals are analogous to z-scores. Thus, standardized residuals larger than the $| \pm 2.58 |$ correspond to a p-value of $p < .01$, which may suggest localized areas of strain. Additionally, correlation residuals $\geq$ *.10 suggests could also suggest localized areas of strain.*

Additionally, Modification Indices (MI) and Expected Parameter Change (EPC) were examined to determine if we need to add more parameters to the model. To avoid overfitting the sample and minimize our chance of capitalizing on chance associations (i.e., Type I errors) in the sample data (Brown, 2015), we considered parameter revisions when (1) χ^2 (1) ≥ 3.84 (critical value for χ^2 at $p < .05$), (2) EPC values indicated at least reasonable amount of effect size (e.g., $r \geq .30$; Cohen, 1988), and suggested revisions have theoretically-based arguments for adding the parameters.

On the other hand, univariate Wald tests (Brown, 2015) were examined to provide an estimate of how much the overall model χ^2 will increase if a freely estimated parameter is fixed to zero. A non-significant Wald test value ($\chi^2 <$ 3.84) indicates that removing the freely estimated parameter (e.g., fixing it to zero) will not result in a significant decrease in model fit. Lastly, parameter estimates were also examined for possible Heywood cases (i.e., out-of-bound parameter estimates) prior to the interpretation of parameter estimates.

Two-Step Modelling Approach

A two-step modelling approach was utilized to estimate our measurement and structural parameter estimates (Kline, 2015). In the first step, the Structural Regression (SR) model was respecified as a CFA measurement model, which was then analyzed to determine whether it fits the data. At this step, the goal was to find an adequate measurement model based on the aforementioned global (e.g., RMSEA, CFI) and localized ill fit indices (e.g., modification indices, Wald tests, etc).

After an acceptable measurement model was found, the second step was to fit the proposed structural relationships between latent constructs and covariates (i.e., SR Model) and examine global and localized ill fit indices again. When specifying the structural relationships, SDT provided the theoretical frameworks for how each latent variable should be connected. Namely, personal worldview conviction is expected to have an indirect effect on financial well-being through intrinsic and extrinsic values. Covariates (i.e., age, education, marital status, gender, and family size) for financial well-being were added to the model at this second step as well. To that end, the statistical significance, size and direction of path coefficients, and global model fit indices were also examined to determine if covariates should be retained in the final model. To directly compare non-nested models (i.e., model with and without covariates) at the global fit level, we examined Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) fit indices as well. Non-nested models that have an AIC values ≥ 10 (Hilbe, 2011) or BIC values ≥ 10 (Raftery, 1995) suggests that the model with smaller AIC or BIC value is preferred.

Transparency and Openness

De-identified data and analytic code for reproducing the analysis can be found in Open Science Framework, a publicly accessible repository. These files can be found at https://osf.io/hwq5a/?view_only=fbafdb93b4ae4ad39c641e2e4670b92f. Self-report measures described in the Methods section, however, are not available due to copyright restrictions.

Results

Descriptive Statistics

The Prolific survey service gathered the original dataset of 606 observations in a way to be nationally representative by age and race. The race composition of this initial dataset was: White (61%), Black (13%), Hispanic/Latino (10%), Asian (8%), Other (8%). After adjusting for data quality (see more details in section 4.1), the sample size of 492 had the following race composition that was not materially changed: White (58%), Black (15%), Hispanic/Latino (11%), Asian (8%), Other (8%). The average age of participants was 48. Regarding education, roughly half of the participants had a bachelor's degree or more (34% only bachelor's and 17% more than bachelors). The top three worldview convictions of the survey participants were Christian (1.77 average score), Therapeutic Moralistic Deist (1.70), and Existential (1.55). The lowest worldview conviction was Eastern Pantheism (1.29). See Table 5 for more descriptive characteristics of the survey sample. Correlations between all manifest variables are provided in Table 6.

Table 5
Descriptive Characteristics of Variables (N=492)

Variable (Reference Group)	Mean	St. Dev.	Min	Max
Worldview Conviction				
Christian	1.77	0.72	0	3
Islamic	1.47	0.72	0	3
Deist	1.70	10.54	0	3
Pantheism	1.29	0.70	0	3
New Age	1.30	0.68	0	3
Humanist	1.50	0.52	0	3
Existential	1.55	0.58	0	3
Postmodern	1.30	0.60	0	3
Intrinsic Values				
Personal Growth	5.26	0.88	2.20	7.00
Relationships	5.39	1.17	1.00	7.00
Community	4.56	1.20	1.00	7.00
Extrinsic Values				
Wealth	3.94	1.54	1.00	7.00
Fame	2.16	1.21	1.00	6.53
Image	3.00	1.30	1.00	6.60
Financial well-being				
Margin	2.08	1.32	0	4
Not behind	2.50	1.37	0	4
Freedom	2.09	1.29	0	4
Control Variables				
Age	48.77	17.78	18	94
Education	2.51	0.94	0	4
Family size	1.21	1.33	0	5
Marital Status	0.41	0.49	0	1
Gender	Female = 255; Male = 229; Other = 8			

Table 6
Correlation Matrix for CFA and SEM Analyses.

Obs. Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. christian	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-			
2. islamic	.53*	1.00	-	-	-	-	-	-	-	-	-	-	-	-			
3. deist	.58*	.49*	1.00	-	-	-	-	-	-	-	-	-	-	-			
4. panth.	.45*	.49*	.46*	1.00	-	-	-	-	-	-	-	-	-	-			
5. newage	.42*	.47*	.40*	.72*	1.00	-	-	-	-	-	-	-	-	-			
6. human	.36*	.35*	.36*	.44*	.48*	1.00	-	-	-	-	-	-	-	-			
7. existent.	.21*	.31*	.35*	.42*	.45*	.45*	1.00	-	-	-	-	-	-	-			
8. postm.	.34*	.35*	.32*	.47*	.50*	.46*	.43*	1.00	-	-	-	-	-	-			
9. pgwth.	.11*	.04	.12*	.12*	.08	.21*	.23*	.16*	1.00	-	-	-	-	-			
10. relate.	.10*	.02	.03	.00	-.01	.10*	.04	.04	.50*	1.00	-	-	-	-			
11. comm.	.12*	-.03	.19	.05	.07	.08	.14*	.10*	.62*	.41*	1.00	-	-	-			
12. wealth	-.01	-.01	.04	-.00	.07	.12*	.06	.15*	.12*	.09	.05	1.00	-	-			
13. fame	.01	-.03	-.02	.05	.11*	.08	.05	.11*	.32*	.19*	.42*	.50*	1.00	-			
14. image	.02	-.04	.02	-.03	.03	.15*	.10*	.09	.35*	.23*	.34*	.56*	.67*	1.00			
15. margin	-.01	.02	.01	-.01	.00	.01	-.06	.01	.25	.30	.13*	.11*	.14*	.15*	1.00		
16. notbehind	.03	.02	.02	-.01	-.03	-.06	-.10*	.03	.22*	.24*	.15*	-.13*	-.01	-.01	.61*	1.00	
17. freedom	.09	.10*	.04	.07	.03	-.02	-.02	.05	.26*	.23*	.15*	-.15*	.02	.00	.51*	.58*	1.00

Note. CFA = confirmatory factor analysis. SEM =Structural Equation Modelling. *N* = 492.

Two-Step Modelling

Measurement Model

The first step in a two-step modelling approach is to establish a viable measurement model. A structural regression model was respecified as a measurement model, allowing for all pairwise correlations between exogenous latent variables. Global fit indices for all fitted measurement models are provided in Table 7.

Table 7

Global Fit Indices for Measurement and Structural Models

Model	Chi-Square	SRMR	RMSEA	TLI	CFI	Revision Notes
Original Measurement Model	χ^2 (110) = 321.510, $p < .001$	.055	.064, 90% CI [.056 - .072]	0.914	.931	Original Measurement Model
1st Revised Measurement Model	χ^2 (109) = 290.493, $p < .001$	.053	.059, 90% CI [.051 - .067]	0.941	.921	Added correlated residual between Community and Fame Indicators
2nd Revised Measurement Model	χ^2 (108) = 261.275, $p < .001$	.049	.055, 90% CI [.046 - .063]	0.937	0.95	Added cross-loading for Intrinsic Values on Wealth Indicator
Original Structural Regression Model	χ^2 (108) = 261.275, $p < .001$	.049	.055, 90% CI [.046 - .063]	0.937	0.95	Original Structural Model
First Revised Structural Regression Model	χ^2 (109) = 262.675, $p < .001$	0.05	.054, 90% CI [.046 - .063]	0.937	0.95	Removed direct path from Conviction to Financial Well-Being
Second Revised Structural Regression Model	χ^2 (199) = 862.222, $p < .001$	0.084	.083, 90% CI [.078-.089]	0.818	0.789	Added age, education, marital status, family size, and gender as covariates for Financial Well-Being
Third Revised Structural Regression Model	χ^2 (179) = 780.836, $p < .001$	0.084	.084, 90% CI [.078-.090]	0.802	0.832	Removed gender as covariate for Financial Well-Being

Note. Although age, education level, marital status and family size were statistically significant predictors of Financial Well-Being in the Third Structural Regression Model, global fit indices ranged from poor to mediocre fit. Consequently, the final structural regression model was First Revised Structural Model, a model with acceptable to good overall fit indices when covariates for financial well-being were excluded from the model.

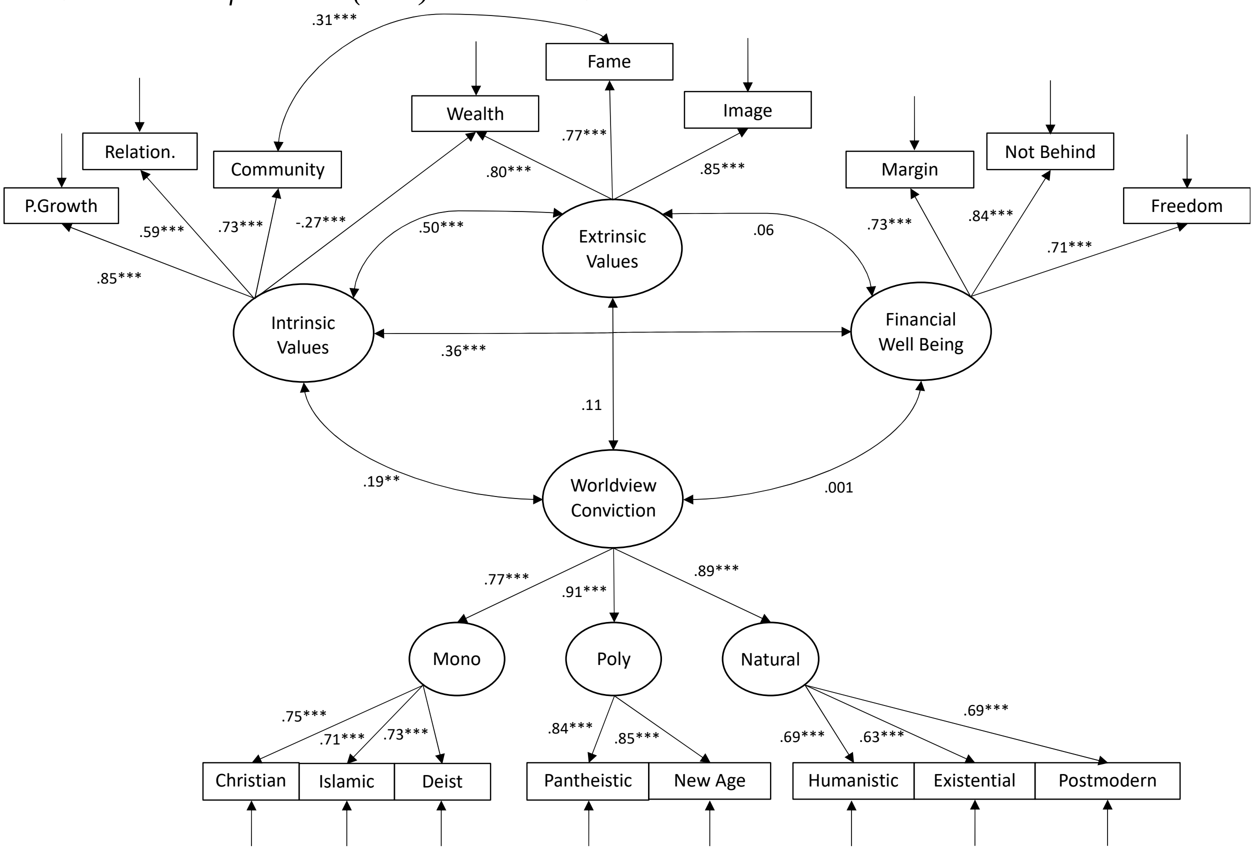
As delineated in Table 7, three measurement models were examined in a stepwise fashion. Examination of global fit indices, standardized residuals, Wald tests, and modification indices informed the decision to ultimately add two post-hoc measurement model parameters: (1) correlated residuals between the ‘community’ and ‘fame’ indicators, and (2) a cross-loading between the ‘wealth’ indicator and the ‘Intrinsic Value’ latent variable.

Correlated residual between ‘community’ and ‘fame’ indicators was added because being known in the community could facilitate efforts to improve the lives of others. Adding this corelated residual was associated with a statistically significant improvement of overall fit χ^2 (1) = 31.02, $p < .001$ and a medium effect size ($r = .30$). Additionally, the cross-loading of ‘wealth’ on the ‘Intrinsic Value’ latent variable was added because pursuing wealth as an end goal has been shown to be profoundly alienating and anti-social from relationships and community (Vohs et al., 2006). Adding this cross-loading was associated with a statistically significant improvement in overall fit χ^2 (108) = 261.275, $p < .001$ and small to medium effect size ($\lambda = -.27$).

In the 2nd (final) revised measurement model, all indicators loaded on to their respective latent variable in a statistically significant way using a 0.01 alpha level. Global fit indices ranged from adequate ($\chi 2$ (108) = 261.275, p < .001; RMSEA = .055, 90% CI [.046 - .063]; TLI = 0.937) to good (CFI = .95) model fit.[1] The measurement model for the 2nd (and final) revised measurement model is depicted in Figure 3.

Figure 3

Measurement Model for the 2nd (Final) Revised Measurement Model

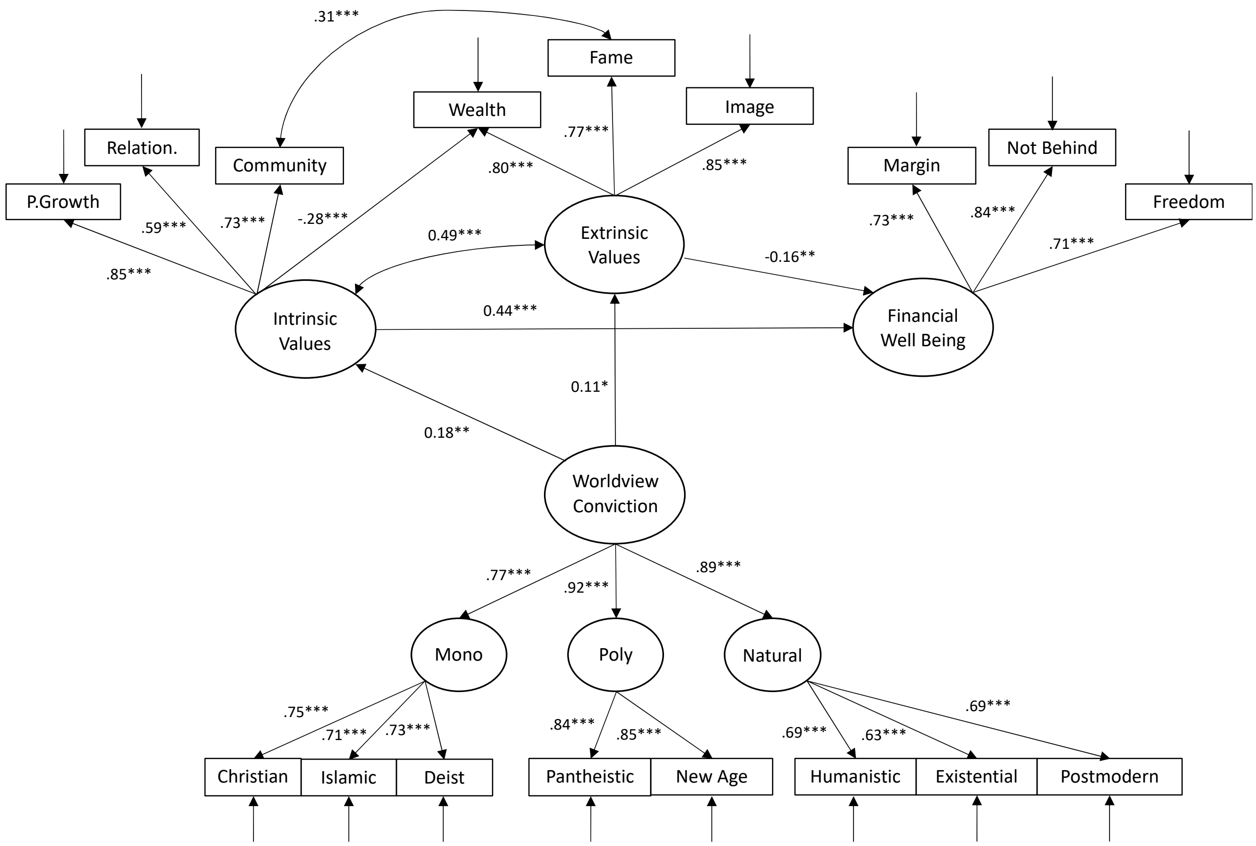


Note. P.Growth = Personal Growth; Relation. = Relationships; Mono = Monotheism; Polytheism. Model Fit Indices: $\chi 2$ (108) = 261.28, p < .001; SRMR = .049; RMSEA = .055, 90% CI [.046 - .063]; TLI = 0.937; CFI = .95.
**p* < .05. ***p* < .01. ****p* < .001

Structural Regression Model Results

As delineated in Table 7, four structural regression models were examined in a stepwise fashion. Examination of global fit indices, standardized residuals, Wald tests, and modification indices informed the decision to remove a direct path from the ‘Worldview Conviction’ latent variable to ‘Financial Well-Being. Specifically, the estimated regression coefficient for this pathway was not statistically significant (z = -1.19; p = .23) and appeared to have a small effect size (β = -0.07) relative to the other standardized regression coefficients. The non-significant Wald test value (χ^2 < 3.84) indicated that removing this freely estimated parameter (e.g., fixing it to zero) would not result in a significant decrease in model fit. Not surprisingly, examination of global fit indices (compare ‘Original Structural Regression Model’ and ‘First Revised Structural Model in Table 8) suggested virtually identical global model fit.

Figure 4
Final Structural Regression Model



Note. P.Growth = Personal Growth; Relation. = Relationship; Mono = Monotheism; Polytheism.Model Fit Indices: $\chi 2$ (109) = 262.68, p < .001; SRMR = .050; RMSEA = .054, 90% CI [.046 - .063]; TLI = 0.937; CFI = .95
**p* < .05. ***p* < .01. ****p* < .001

After selecting the best fitting structural regression model (Figure 4), we examined the parameter estimates of our path coefficients (Table 9). Results showed that worldview conviction had a direct effect on intrinsic values (β = 0.18, $p < .001$), which was evidence in support of hypothesis 1. Worldview conviction did not appear to have a direct effect on extrinsic values (β = 0.11, $p = .09$), which offered partial support to Hypothesis 2. Viewed together, higher worldview conviction appeared to be a stronger predictor of intrinsic values compared to extrinsic values. Lastly, evidence was found in support of both hypotheses 3 and 4 given the statistically significant direct effects between intrinsic value and financial well-being (β = 0.44, $p < .001$) and extrinsic values and financial well-being (β = -0.16, $p < .05$). Finally, these results suggested an indirect effect from worldview conviction to financial well-being through intrinsic values. Specifically, stronger worldview conviction predicted higher endorsement of intrinsic values, which in turn predicted higher financial well-being (β = 0.08, $p < .05$).

Table 8
Fit Indices for Final Structural Regression Model.

Index	Model Values	Indication of Fit	Suggested Cut Off Values
c[2]	262.75 (109) (p<.001)	Poor fit	Non-significant. Sensitive to sample size. Models with > 400 cases will mostly result in significant model chi-square *exact fit* test (Kenny 2015).
RMSEA	0.054	Mediocre fit	Excellent fit < .01, good fit < .05, mediocre fit < .08 (MacCallum et al. 1996).
90% Confidence Interval for RMSEA	(.046, .062)	Marginally good fit	Lower bound close to zero passes the close-fit test. Upper bound < .05 passes the not-close-fit test. Upper bound <.10 passes the poor-fit test (Kline 2015).
CFI	0.950	Marginal fit	< .90 poor fit, .90 - .95 marginal, > .95 good (Kenny 2015).
TLI	0.937	Marginal fit	< .90 poor fit, .90 - .95 marginal, > .95 good (Kenny 2015).
SRMR	0.050	Good fit	< .08 good fit (Hu and Bentler 1999)

Table 9
Structural Regression Results from Final Structural Regression Model

Type	Effect	*b*	*SE*	*z*	*p*-value	β
Direct	Conviction → Intrinsic Values	0.18	0.07	2.80	.005	0.18
Direct	Conviction → Extrinsic Values	0.11	0.06	1.70	.090	0.11
Direct	Intrinsic Values → Fin. Well-Being	0.47	0.08	6.02	< .001	0.44
Direct	Extrinsic Values → Fin. Well-Being	-0.18	0.07	-2.493	.013	-0.16
Indirect	Conviction → Intrinsic Values → Fin. Well-Being	0.09	0.03	2.67	.008	0.08
Indirect	Conviction → Extrinsic Values → Fin. Well-Being	-0.02	0.01	-1.334	.18	-0.02

Note. Model Fit Indices: $\chi^2(109) = 262.68$, $p < .001$; RMSEA = .054, 90% CI [.045, .062], CFI = .95; TLI = 0.937; SRMR = 0.050

Discussion

Results of this paper found evidence for a connection between personal worldview and value types (hypotheses 1 and 2). This is consistent with prior literature showing that worldviews are the foundation for an individual's values

(Magee, 2014; McDowell, 2024). Per hypothesis 1 and 2, worldview conviction was a stronger relationship between intrinsic value types versus extrinsic value types, which provides evidence that individuals who can identify their personal worldview with conviction are more likely to have an intrinsically-held value type of personal growth, relationships, or community. The results from this paper also found evidence that an individual's value type is an important variable when it comes to predicting financial well-being (hypotheses 3 and 4). This is consistent with prior literature that showed a connection between values and finances (Enete, 2024; Danes and Haberman, 2007; Nye and Hillyard, 2013). Given the statistically significant indirect effect between worldview conviction and financial well-being found in this paper, identifying the personal worldview of an individual could be an important way to influence their financial well-being.

The negative relationship between extrinsically-held value types and financial well-being is consistent with SDT, which predicts that these value types of wealth, fame, and image will not meet a participant's three basic psychological needs of autonomy, relatedness, and competence (Deci and Ryan, 2000). Given this result, an important research agenda going forward would be to determine whether there are ways to strengthen an individual's worldview conviction so that they move towards a more intrinsic value type (i.e., personal growth, deepening relationships, community contribution), which is shown in this paper to be associated with higher financial well-being. One potential step towards this end would be to develop a worldview identification tool that is used on an experimental group to test whether helping individuals identify their personal worldview would result in participants adopting a more intrinsic value adoption. This would be consistent with prior research that found that simply discussing intrinsic versus extrinsic values (Lekes et al., 2012) or personal worldviews (Jonas and Fischer, 2006) helped individuals move towards a healthier internalizing of beliefs and values.

Limitations for this study include the fact that self-reported assessment of beliefs and values may not truly represent the beliefs and values of an individual. In other words, the mono-method bias inherent in the design of the study (i.e., all self-report measures) limits the validity of our results. At the same time, SEM offers a more powerful approach to testing our hypotheses compared to conventional regression approaches (e.g., multiple regression with ordinary least squares) because (1) SEM accounts random measurement error or score unreliability, and (2) can test predictions between observed and latent variables. Another limitation is the cross-sectional data collection strategy used in this study. Although temporal order is implied in the direct effects of our structural regression coefficients, the lack of a temporal precedence and experimental manipulation preclude making strong conclusions regarding cause-effect relationships. Third, self-reported attitudes around financial well-being may not be stable across time. Future studies, thus, should consider conducting a longitudinal measurement invariance study to distinguish between alpha change (i.e., true-score change in a construct) compared to beta change (i.e., measurement properties of indicators are temporally inconsistent) and gamma change (i.e., gross meaning of the construct changes across time; Brown, 2015). Finally, using a convenience Prolific survey may introduce bias given that these are specific types of individuals who have signed up for a survey service and they may not be fully representative of the U.S. adult population. To mitigate this risk, the survey was collected in a way by Prolific to be nationally representative by race and age.

Notwithstanding the limitations of this paper, the results of this study offer reasonable support for the importance of paying attention to personal worldview and values when policy makers, researchers, and financial services professionals work to understand financial well-being. In addition, as the financial services industry evolves to a more fiduciary model (i.e., acting in the best interest of a client), a financial professional would be empowered to become a more effective fiduciary if they were to explore their client's best interest through "walking in their shoes" as they learn the language of their client's worldview and value type, which should, then, help them better predict their financial well-being.

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Financial Independence and Financial Anxiety: Does First-Generation College Student Status Matter?

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Abstract

Attending college is becoming less affordable for students from lower income families and first-generation college students (FGCS) who often have to work to support themselves financially. The financial anxiety and financial independence experienced by FGCS and non-FGCS is understudied. This poster examines the financial anxiety and financial independence experienced by students attending two public universities in 2023. Findings indicate that FGCS have greater financial anxiety and are more financially independent than non-FGCS. Additionally, financial independence and FGCS status were found to be significant positive predictors of financial anxiety. Implications for practitioners, educators, and university faculty/staff will be discussed.

Keywords: financial anxiety, financial independence, first-generation college students

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Neutral Approach to Dividend Policy when Modeling the Sensitivity of Key Indicators of Market Activity

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Abstract

The article is devoted to the consideration of the conceptual foundations for analyzing the sensitivity of key indicators of the activity of a public company in the stock market to the main determining factors in the context of a neutral approach to the implementation of its dividend policy. It is shown that an analysis of the sensitivity of the key indicators of the market activity of a public company to the main determining factors in the context of a neutral approach to the implementation of the dividend policy of a public company involves the construction of appropriate elasticity models.

Keywords: sensitivity analysis, elasticity, modeling, market activity, neutral approach, dividend policy, public company

Introduction

In the conditions of a modern developed market economy, a rather important characteristic of the activity of a public company (public joint stock company) is its activity in the stock market (market activity), which should be understood as the choice of optimal strategies and tactics in using profit, accumulating it, increasing capital by issuing additional shares, as well as the impact on the market price of the share. Ensuring the level of market activity required by a public company, as a rule, involves the development of a set of management decisions that contribute, at least, to the non-deterioration of its position in the capital market in terms of the dynamics of market indicators (absolute - the market price of an ordinary share, earnings per ordinary share and dividend per ordinary share, as well as relative **–** financial coefficients of market activity).

The activity of a public company in the stock market can be considered as an essential component of its sustainable development, which implies the possibility of long-term continuation of its effective activities, which is determined by the availability and level of efficiency in the use of relevant resources and, as the author of this article believes, lies primarily in the sustainability of growth in production volumes. and sale of products (works, services), innovative and investment activity, as well as welfare of employees and shareholders of a public company.

As an important component of the activities and market activity of a public company, one should consider its dividend policy, which is usually understood as a set of decisions related to the payment of dividends to shareholders, which is a fairly important aspect of the activities of a public company. Decisions to pay dividends are usually classified as financial decisions because dividends paid reduce a public company's reinvested earnings and thus affect its financing.

It should also be especially noted that the dividend policy, on the one hand, should contribute to achieving the main goal of financial management - maximizing the material well-being of shareholders, and, on the other hand, take into account the interests of all other stakeholders interested in the activities of a public company (including potential investors) to ensure its sustainable development in the long term. Fulfillment of this requirement is possible only within the framework of a neutral approach to the implementation of the dividend policy of a public company (Krylov, 2020, 2021, 2025).

Obviously, the problem of sustainable development of companies cannot be solved without the formation of appropriate information support related to the development of recommendations for compiling the so-called integrated report on the sustainable development of the company, among which the GRI standards (Global Reporting Initiative), focused on the principle of "triple outcome" (Triple bottom Line): company economics, company production ecology and company social policy (Global Reporting Initiative (GRI), 2013). At the same time, indicators that characterize their activity in the securities market can be included in the list of key indicators of economic performance of public companies.

All of the above makes it appropriate to study the theoretical and practical aspects of analyzing the sensitivity of key indicators of the activity of a public company on the stock market (market activity) to the main determining factors in the conditions of a neutral approach to the implementation of its dividend policy, which allows taking into account the interests of all other stakeholders interested in the activities of the public company (including potential investors) to ensure its sustainable development in the long term.

The motivation of the study is to ensure the development, justification and effective management of the dividend policy of a public company within the framework of a neutral approach to ensure the interests of its main stakeholders by constructing elasticity models of key indicators of market activity according to their main determining factors.

Materials and Methods

Previous Research

The indicators of market activity mentioned above have been widely discussed in the publications of many researchers (Aharony & Swary, 1980; Akhigbe & Madura, 1996; Ang et al., 2000; Beaver & Morse, 1978; Black, 1976; Brealey et al., 2011; Brooks, 1996; DeAngelo et al., 1992; Dielman & Oppenheimer, 1984; Dontoh et al., 1992; Easton & Harris, 1991; Fama & French, 1989; Goetzmann & Jorion, 1995; Hauser, 2013; Jensen & Johnson, 1995; Kalay & Loewenstein, 1986; McLaney, 1992; Ofer & Siegel, 1987; Pattell & Wolfson, 1984; Petit, 1972; Van Horne & Wachowicz, 2005; Woolridge, 1983; Zacks, 1979).

Having generalized and systematized the points of view of the above researchers, we will single out the key financial ratios that characterize the market activity of a public company, dividing them into two interrelated groups (Table 1).

Table 1. Key financial ratios characterizing the market activity of a public company

Name of indicator	Calculation formula	
	Numerator	Denominator
1. Indicators characterizing the investment attractiveness of common stock		
Common stock quote ratio	Market price of an ordinary share	Profit per ordinary share
Dividend yield on common stock	Dividend per ordinary share	Market price of an ordinary share
Market Price to Dividend Ratio per Common Share	Market price of an ordinary share	Dividend per ordinary share
2. Indicators characterizing the dividend policy		
Dividend yield ratio (Formula 1)	Dividend per ordinary share	Profit per ordinary share
Dividend yield ratio (Formula 2)	Dividends on ordinary shares	Net profit - Dividends on preferred shares
Dividend coverage ratio	Earnings per ordinary share	Dividend per ordinary share
The rate of distribution of net profit for dividends	Dividends on all types of shares	Net profit
Preferred share dividend coverage ratio	Net profit	Dividends on preferred shares
Ratio of dividends on ordinary and preferred shares	Dividends on ordinary shares	Dividends on preferred shares

Source: compiled by the author of the article

The indicators of the first group (quotation ratio of an ordinary share, dividend yield of an ordinary share, ratio of the market price of an ordinary share and dividend per ordinary share) characterize, first of all, the investment attractiveness of ordinary shares of a public company for potential investors.

The indicators of the second group (dividend yield ratio, dividend coverage ratio, the rate of distribution of net profit for dividends, the dividend coverage ratio for preferred shares, the ratio of dividends for ordinary and preferred shares) characterize exclusively the dividend policy of a public company.

Since the investment attractiveness of ordinary shares of a public company largely depends on its dividend policy, the indicators of the second group should be considered as basic, which determines their particular importance in the analysis of market activity. At the same time, many determining factors influence both groups of indicators.

A neutral approach to the dividend policy of a public company was first formulated and justified by the author of this article in a number of his previous publications (in particular, (Krylov, 2020, 2021, 2025)). This approach is based on the joint use of the theory of dividend irrelevance, the theory of materiality of dividend policy and the concept of sustainable development of the company.

It was shown that the "cornerstone" of the dividend policy, which determines its types (methods), is ultimately the ratio between dividend and earnings per ordinary share (dividends on ordinary shares and net income minus dividends on preferred shares), which makes the dividend ratio output (or its inversely proportional indicator - the dividend coverage ratio) is the most important indicator when analyzing the dividend policy of a public company.

The results of assessing its value largely depend on the chosen approach to the implementation of the dividend policy of a public company: passive or active (Van Horne, 1989; Van Horne & Wachowicz, 2009).

The passive approach to dividend policy implementation, or dividend irrelevance theory, to which F. Modiliani and M. Miller (Miller & Modiliani, 1961) made a crucial contribution, arguing that for a given choice of investment decisions, the dividend yield ratio is no more than a detail of the big picture. It does not affect the welfare of shareholders. Miller and Modigliani argue that the value of a public company is determined solely by the return on its assets or its investment policy, and that the way in which net income is distributed between dividends and reinvested earnings does not affect this valuation.

In other words, the payment of dividends acts as a "passive balance" after the investment projects of the public company have been financed. The value of the dividend yield ratio will change from period to period in accordance with fluctuations in the number of investment projects acceptable from the point of view of the management of a public company. If a public company has many favorable investment opportunities, then the dividend yield ratio is likely to be zero. In contrast, if a public company does not have profitable investment opportunities, the dividend yield ratio is likely to be 1. For any situation in between, the value of the dividend yield ratio will take values from 0 to 1 (Van Horne, 1989). At the same time, shareholders allegedly do not care what factor will increase their material well-being: dividends or an increase in the market value of ordinary shares as a result of the implementation of investment projects by a public company.

A formalized illustration of a passive approach to dividend policy is the model of James E. Walter (Walter, 1956), which is considered one of the first and has the advantages of relative simplicity and clarity:

$$P = \frac{D + \frac{r}{\rho} * (E - D)}{\rho}, \tag{1}$$

where P is the predicted market price of an ordinary share,

D – dividend per ordinary share;

E – earnings per ordinary share;

r – return on investment of a public company;

ρ – market capitalization level (average market discount rate used to determine expected cash flows).

According to the active approach to the implementation of the dividend policy, or the theory of the materiality of the dividend policy, the main ideologists of which were M. Gordon (Gordon, 1963) and J. Lintner (Lintner, 1962), decisions on the payment of dividends play a significant, active role. The fact is that in the conditions of uncertainty, which is more or less typical for the activities of almost any public company in market conditions, shareholders do not care whether they receive their income in the form of dividends or in the form of an increase in the market value of ordinary shares. The payment of dividends gives shareholders a sense of certainty, since dividends are a type of current income, and the prospect of a return on capital can be pushed far into the future. Therefore, shareholders are not at all indifferent to what factor will increase their material well-being: dividends or an increase in the market value of ordinary shares as a result of the implementation of investment projects by a public company. In addition, if potential investors prefer early resolution of uncertainty, they will be willing, other things being equal, to pay a higher price for shares that entitle them to receive a larger current dividend (Van Horne, 1989).

A formalized argument in favor of an active approach to the implementation of dividend policy is M. Gordon's model of economic growth (Gordon, 1959):

$$P_0 = \frac{D_1}{k\text{-}g} = \frac{D_0 * (1+g)}{k\text{-}g}, \qquad (2)$$

where P_0 is the predicted current (theoretical) value of an ordinary share at the zero moment,

D_1 – expected dividend per ordinary share of the future period;

D_0 – dividend per ordinary share of the current period;

k – acceptable discount rate (the rate of return required by investors per ordinary share of the company);

g – dividend growth rate per ordinary share (assumed to be constant over time).

The above models (1) and (2) can be considered as formalized tools for forecasting and, accordingly, managing the dividend policy within the framework of passive and active approaches to its implementation.

It should also be noted that, as mentioned earlier, it is of particular interest to analyze the sensitivity of these indicators to changes in the main determining factors presented in their models, which leads to an increase in the effectiveness of the analysis and forecasting of the market activity of a public company in the framework of a neutral approach to its dividend policy, defining the methodological basis of this study.

Completion of a brief review of previous developments, which allows us to reveal the current state of the problem discussed in this article, allows us to move on to characterizing the methodological basis of this study.

Methodological Basis of the Research

The methodological basis of the study, the results of which are presented in this article, was a neutral approach to the dividend policy of a public company and the concept of sensitivity analysis.

The dividend policy of a public company, as noted earlier, should not only help maximize the material well-being of its shareholders, but also take into account the interests of all other stakeholders interested in the company's activities (suppliers, buyers, employees, the state, etc.) to ensure its long-term sustainability by contributing to the long-term value of the public company (Dunphy, Griffiths & Suzanne, 2007; Freeman, 2010; Friedman & Miles, 2006).

All this leads to the need to achieve a kind of "balance" between passive and active approaches within the framework of the so-called neutral approach to the implementation of dividend policy, which takes into account both the need to finance profitable investment projects and pay dividends to shareholders of a public company (not on a residual basis), thus leading to the maximization of the market value of its common stock.

Formalization of the idea of a neutral approach to the implementation of the dividend policy involves the construction of corresponding models of the dividend yield ratio and the dividend coverage ratio, as well as the expected price of an ordinary share.

To build models of the dividend yield ratio and the dividend coverage ratio, we equate the predicted market price of an ordinary share, calculated according to the model of D.E. Walter (formula (1)), to the predicted current (theoretical) value of an ordinary share at the zero moment, determined according to the M. Gordon economic growth model (formula (2)) based on the assumption that the current value of the flow of expected future dividends on an ordinary share corresponds to its market price (Van Horne, 1989), which is most relevant in a highly efficient securities market:

$$P = P_0, \tag{3}$$

while introducing a single designation of the dividend per ordinary share as D ($D = D_0$).

As a result, we have the following equality:

$$\frac{D+\frac{r}{\rho}*(E-D)}{\rho} = \frac{D*(1+g)}{k-g}. \tag{4}$$

Through a series of transformations from formula (4), we obtain models of the dividend output ratio (DP) and the dividend coverage ratio (DC):

$$DP = \frac{D}{E} = \frac{\frac{r}{\rho}}{\frac{\rho*(1+g)}{k-g}+\frac{r}{\rho}-1}, \tag{5}$$

$$DC=\frac{E}{D}=\left(\frac{\rho*(1+g)}{k-g} - 1\right) * \frac{\rho}{r} + 1. \tag{6}$$

Formulas (5) and (6) show that in the context of a neutral approach to the implementation of dividend policy, the following factors influence the dividend yield and dividend coverage ratios: the return on investment of a public company, the market capitalization level, the rate of return required by investors per ordinary share of the company, and the accepted constant in time rate of growth of dividend per ordinary share. The calculation of the influence of determining factors on the deviation of performance indicators in models (5) and (6) can be carried out using the appropriate methods of factor analysis.

The models of the dividend yield coefficient (formula (5)) and the dividend coverage ratio (formula (6)) built by the author of this article can be used in predictive and analytical estimates of the values of these coefficients within the framework of a neutral approach to the implementation of the dividend policy directly, as well as some other indicators , characterizing market activity (for example, the dividend yield of an ordinary share and the quote coefficient of an ordinary share), calculated on their basis.

To build a model of the market price of an ordinary share, we first express the amount of dividend per ordinary share from the D.E. Walter (formula (1)) and the dividend per ordinary share of the current period from the M. Gordon economic growth model (formula (2)) respectively as follows:

$$D=\frac{\rho*P-\frac{r}{\rho}*E}{1-\frac{r}{\rho}}, \tag{7}$$

$$D_0=\frac{P_0*(k-g)}{1+g}. \tag{8}$$

Then we equate the amount of dividend per ordinary share from the D.E. Walter (formula (7)) to the dividend per ordinary share of the current period from the economic growth model of M. Gordon (formula (8)):

$$D = D_0, \tag{9}$$

while introducing a single designation of the expected, i.e. equilibrium in relation to the position of a particular investor and the situation on the stock market, the price of an ordinary share as P ($P = P_0$).

As a result, we have the equality:

$$\frac{\rho*P-\frac{r}{\rho}*E}{1-\frac{r}{\rho}}=\frac{P*(k-g)}{1+g}, \tag{10}$$

from which we obtain a model of the expected price of an ordinary share:

$$P=\frac{\frac{r}{\rho}*E}{\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g}}. \tag{11}$$

According to formula (11), under the conditions of a neutral approach to the implementation of the dividend policy, the expected price of an ordinary share is influenced by the following factors: the return on investment of the company, the market capitalization level, earnings per ordinary share, the rate of return required by investors per ordinary share of the company, and the rate assumed to be constant over time increase in dividend per ordinary share. The calculation of the influence of determining factors on the deviation of the effective indicator in model (11) can be carried out using the appropriate methods of factor analysis.

The model of the expected price of an ordinary share obtained by the author (formula (11)) can be used in predictive and analytical estimates of the values of this rather important indicator of the market activity of a public company within the framework of a neutral approach to the implementation of the dividend policy directly, as well as some other indicators characterizing the market activity of a public company. company (for example, the dividend yield of an ordinary share and the quote ratio of an ordinary share), calculated on its basis.

So, in the conditions of a neutral approach to the implementation of the dividend policy, based on the previously introduced symbols, a model of the dividend yield of an ordinary share (DY) can be formed:

$$DY=\frac{D*(\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g})}{\frac{r}{\rho}*E}. \qquad (12)$$

In accordance with formula (12), under the conditions of a neutral approach to the implementation of dividend policy, the dividend yield of an ordinary share is determined by the influence of the following factors: dividend per ordinary share, market capitalization level, the rate of return required by investors on an ordinary share of the company, the assumed constant time rate of dividend growth per ordinary share and earnings per ordinary share. The calculation of the influence of determining factors on the deviation of the effective indicator in model (12) can be carried out using the appropriate methods of factor analysis.

The model of dividend yield of an ordinary share formed by the author (formula (12)) can be used in predictive and analytical estimates of the values of this ratio within the framework of a neutral approach to the implementation of the dividend policy directly, as well as some other indicators characterizing the market activity of a public company, calculated on its basis (for example, the quotation ratio of an ordinary share).

The factor model of the quote coefficient of an ordinary share (13) is constructed as follows:

$$P/E=\frac{P}{E}=\frac{P}{D}*\frac{D}{E}=\frac{DP}{DY}=\frac{\frac{CD}{NP-PD}}{DY}=\frac{\frac{\frac{CD}{PD}}{\frac{NP}{PD}-1}}{DY}=\frac{DCD}{(CPD-1)*DY}, \qquad (13)$$

where P/E – quote ratio of an ordinary share (Price / Earnings ratio);

DCD – ratio of dividends on ordinary and preference shares;

CPD – dividend coverage ratio for preferred shares;

DP – dividend yield ratio (Dividend payout);

DY – dividend yield of an ordinary share (Dividend Yield);

P – market price of an ordinary share;

E – earnings per ordinary share (Earnings per share);

D – dividend per ordinary share;

CD – total amount of dividends on ordinary shares;

PD – total amount of dividends on preferred shares;

NP – net profit.

In the context of a neutral approach to the implementation of the dividend policy, based on the above conventions, the model of the quotation ratio of an ordinary share (P / E) has the following form:

$$P/E=\frac{DCD*\frac{r}{\rho}*E}{(CPD-1)*D*(\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g})}. \qquad (14)$$

Based on formula (14), in the conditions of a neutral approach to the implementation of the dividend policy, the quote ratio of an ordinary share depends on the influence of such factors as earnings per ordinary share, the ratio of dividends on ordinary and preferred shares, the company's return on investment, market capitalization level, coverage ratio dividends on preferred shares, the rate of return required by investors per ordinary share of the company, the rate of growth of the dividend per ordinary share assumed to be constant over time, and the dividend per ordinary share. The calculation of the influence of determining factors on the deviation of the effective indicator in the model (14) can be carried out using the appropriate methods of factor analysis.

The model of the quote coefficient of an ordinary share built by the author (formula (14)) can be used in predictive and analytical assessments of the values of this rather important coefficient characterizing the market activity of a public company in the framework of a neutral approach to the implementation of its dividend policy, depending on its key indicators.

The forecast values of the above indicators of the market activity of a public company, obtained using models (5), (6), (11), (12) and (14), can be analyzed from the perspective of one or another stakeholder interested in the sustainable development of this company, based on the results of which they can be given a predictive assessment of the level of efficiency in managing its market activity (high, medium, low, extremely low).

The concept of sensitivity analysis has by now been widely used and deeply considered in many literary sources, in particular, (Cacuci, 2003; Griewank, 2000; Helton, Johnson, Salaberry & Storlie, 2006; Leamer, 1985; Pannell, 1997; Saltelli, 2002; Saltelli, Chan & Scott, 2000).

As is well known, sensitivity analysis is designed to model the impact of various factors on the bottom line in the financial model of a business or project.

Sensitivity analysis of indicators is widely used in the practice of financial management. In the general case, it comes down to studying the dependence of some effective indicator on the variation in the values of the factors involved in its determination. In other words, this method allows you to get answers to questions like: what will happen to the resulting value if the value of some factor value changes? Hence its second name is “what if” analysis.

As a rule, such an analysis involves the following steps:

1. The relationship between the performance indicator and the factors determining it is set in the form of a mathematical equation or inequality.

2. The most probable values for the determining factors and possible ranges of their changes are determined.

3. By changing the values of the determining factors, their influence on the performance indicator is investigated.

The usual procedure for sensitivity analysis is to change one determinant while keeping the rest constant.

Sensitivity analysis is one of the simplest and most common methods of risk analysis. With its help, you can find out which factors (estimated parameters) can be attributed to the most risky.

As an indicator of the sensitivity of the object of risk regarding changes in certain factors, elasticity, or sensitivity of response, is used, which in economic theory in modern conditions is one of the fundamental values. Elasticity is a

measure of the response of one variable (function) to a change in another (argument), is calculated as the limit of the ratio of the relative increment of the function to the relative increment of the argument when the increment of the argument tends to zero and is considered as an important statistical measurement tool widely used in marketing research, and economic analysis tool.
So, the elasticity of the function $y = f(x)$ with respect to the argument *x* is determined by the following a fairly well-known formula, present in many literary sources, in particular (Saltelli, Chan & Scott, 2000):

$$E_x(y) = \lim_{\triangle x \to 0} (\frac{\Delta y}{y} : \frac{\Delta x}{x}) = \frac{x}{y} * \frac{dy}{dx}. \qquad (15)$$

It can be seen from formula (15) that the elasticity $E_x(y)$ of the function $y = f(x)$ is directly proportional to the derivative of this function $\frac{dy}{dx}$ and expresses an approximate percentage increment of the function, which corresponds to **1%** argument increments.

Sensitivity analysis is implemented in financial models using three common methods: sensitivity graphs, sensitivity tables, tornado charts.

Having described in a rather concise form the methodological basis of the study, the main results of which are presented in this article, the author considers it appropriate to proceed to their consideration.

Results

The results of the research of the author of this article are the models developed by him of elasticity of key indicators of the activity of a public company in the stock market according to the main factors determining them in the conditions of a neutral approach to the implementation of dividend policy: dividend yield ratio, dividend coverage ratio, expected price of an ordinary share, dividend yield of an ordinary share and quote ratio of an ordinary share - based on the models of the listed indicators (5), (6), (11), (12) and (14), using the formula (15) and previously introduced symbols.

Models of elasticity of the dividend yield coefficient of a public company with respect to the profitability of its investments ($E_r(DP)$), market capitalization level ($E_\rho(DP)$), the rate of return required by investors per ordinary share of a public company ($E_k(DP)$) and the rate of dividend growth per ordinary share assumed to be constant over time ($E_g(DP)$) are respectively represented by formulas (16), (17), (18) and (19):

$$E_r(DP) = \frac{r}{DP} * \frac{\partial DP}{\partial r} = \frac{\frac{\rho*(1+g)}{k-g} - 1}{\frac{\rho*(1+g)}{k-g} + \frac{r}{\rho} - 1}, \qquad (16)$$

$$E_\rho(DP) = \frac{\rho}{DP} * \frac{\partial DP}{\partial \rho} = \frac{1 - \frac{2*\rho*(1+g)}{k-g}}{\frac{\rho*(1+g)}{k-g} + \frac{r}{\rho} - 1}, \qquad (17)$$

$$E_k(DP) = \frac{k}{DP} * \frac{\partial DP}{\partial k} = \frac{\frac{k*\rho*(1+g)}{(k-g)^2}}{\frac{\rho*(1+g)}{k-g} + \frac{r}{\rho} - 1}, \qquad (18)$$

$$E_g(DP) = \frac{g}{DP} * \frac{\partial DP}{\partial g} = \frac{\frac{g*\rho*(k+1)}{(k-g)^2}}{1 - \frac{r}{\rho} - \frac{\rho*(1+g)}{k-g}}. \qquad (19)$$

Models of elasticities of the dividend coverage ratio of a public company with respect to the profitability of its investments ($E_r(DC)$), market capitalization level ($E_\rho(DC)$), the rate of return required by investors per ordinary share of a public company ($E_k(DC)$), and the dividend growth rate per ordinary share assumed to be constant over time ($E_g(DC)$) are respectively represented by formulas (20), (21), (22) and (23):

$$E_r(DC) = \frac{r}{DC} * \frac{\partial DC}{\partial r} = \frac{\rho - \frac{\rho^2 * (1+g)}{k-g}}{\frac{\rho^2 * (1+g)}{k-g} - \rho + r}, \quad (20)$$

$$E_\rho(DC) = \frac{\rho}{DC} * \frac{\partial DC}{\partial \rho} = \frac{\frac{2 * \rho^2 * (1+g)}{k-g} - \rho}{\frac{\rho^2 * (1+g)}{k-g} - \rho + r}, \quad (21)$$

$$E_k(DC) = \frac{k}{DC} * \frac{\partial DC}{\partial k} = \frac{k * \rho^2 * (1+g)}{(g-k)^2 * (\frac{\rho^2 * (1+g)}{k-g} - \rho + r)}, \quad (22)$$

$$E_g(DC) = \frac{g}{DC} * \frac{\partial DC}{\partial g} = \frac{g * (k+1)}{(k-g)^2 * ((\frac{\rho * (1+g)}{k-g} - 1) * \frac{\rho}{r} + 1)}. \quad (23)$$

Formulas (16-23) show that the elasticity of the dividend yield and dividend coverage ratios of a public company with respect to the profitability of its investments to the market capitalization level, the rate of return required by investors per ordinary share of a public company, and the dividend growth rate per ordinary share assumed to be constant over time is influenced by the following factors: the return on investment of a public company, the market capitalization level, the rate of return required by investors per ordinary share of a public company, and the rate of dividend growth per ordinary share assumed to be constant over time. The calculation of the influence of determining factors on the deviation of performance indicators in formulas (16-23) can be carried out using the appropriate methods of factor analysis.

Elasticity models of the expected price of an ordinary share of a public company with respect to earnings per common share ($E_E(P)$), the return on investment of a public company ($E_r(P)$), market capitalization level ($E_\rho(P)$), the rate of return required by investors per common share of a public company ($E_k(P)$), and an assumed time-constant dividend growth rate per ordinary share ($E_g(P)$) are represented by formulas (24), (25), (26), (27) and (28), respectively:

$$E_E(P) = \frac{E}{P} * \frac{\partial P}{\partial E} = 1, \quad (24)$$

$$E_r(P) = \frac{r}{P} * \frac{\partial P}{\partial r} = \left(\rho - (k-g) * \frac{1 - \frac{r}{\rho}}{1+g}\right)^2 + \frac{r * (g-k)}{1+g} + \frac{r * (g-k)^2 * (1 - \frac{r}{\rho})}{\rho * (1+g)^2}, \quad (25)$$

$$E_\rho(P) = \frac{\rho}{P} * \frac{\partial P}{\partial \rho} = \frac{\frac{r}{\rho} * \frac{k-g}{1+g} + \frac{(k-g) * \left(1 - \frac{r}{\rho}\right)}{1+g} - \rho}{\rho - (k-g) * \frac{1 - \frac{r}{\rho}}{1+g}}, \quad (26)$$

$$E_k(P) = \frac{k}{P} * \frac{\partial P}{\partial k} = \frac{k * (1 - \frac{r}{\rho})}{\rho * (1+g) - (k-g) * (1 - \frac{r}{\rho})}, \quad (27)$$

$$E_g(P) = \frac{g}{P} * \frac{\partial P}{\partial g} = \frac{g * \rho * (2 * g - k) * (1 - \frac{r}{\rho})}{(\rho - (k-g) * \frac{1 - \frac{r}{\rho}}{1+g}) * (1+g)^2}. \quad (28)$$

According to formulas (25-28), the elasticity of the expected price of an ordinary share of a public company with respect to the return on investment, the market capitalization level, the rate of return required by investors per ordinary share of a public company, and the dividend growth rate assumed to be constant over time on its ordinary share is influenced by the following factors: the return on investment of a public company, the market capitalization level, the rate of return required by investors per ordinary share of a public company, and the rate of dividend growth per ordinary share assumed to be constant over time. The calculation of the influence of determining factors on the deviation of performance indicators in formulas (25-28) can be carried out using the appropriate methods of factor analysis.

Elasticity models for the dividend yield of a public company common stock to dividend and earnings per common share ($E_D(DY)$ и $E_E(DY)$ respectively), public company return on investment ($E_r(DY)$), market capitalization level ($E_\rho(DY)$), investors' required rate of return per share of a public company common share ($E_k(DY)$), and assumed time-constant growth rate dividends per its ordinary share ($E_g(DY)$) are represented by formulas (29), (30), (31), (32), (33) and (34) respectively:

$$E_D(DY) = \frac{D}{DY} * \frac{\partial DY}{\partial D} = 1, \qquad (29)$$

$$E_E(DY) = \frac{E}{DY} * \frac{\partial DY}{\partial E} = -1, \qquad (30)$$

$$E_r(DY) = \frac{r}{DY} * \frac{\partial DY}{\partial r} = \frac{\frac{k-g}{1+g} - \rho}{\rho - (k-g) * \frac{1-\frac{r}{\rho}}{1+g}}, \qquad (31)$$

$$E_\rho(DY) = \frac{\rho}{DY} * \frac{\partial DY}{\partial \rho} = \frac{2*\rho - \frac{k-g}{1+g} * (1 + \frac{2*r}{\rho})}{\rho - (k-g) * \frac{1-\frac{r}{\rho}}{1+g}}, \qquad (32)$$

$$E_k(DY) = \frac{k}{DY} * \frac{\partial DY}{\partial k} = \frac{k * (\frac{r}{\rho} - 1)}{\rho * (1+g) - (k-g) * (1 - \frac{r}{\rho})}, \qquad (33)$$

$$E_g(DY) = \frac{g}{DY} * \frac{\partial DY}{\partial g} = \frac{g * (1+k) * (1 - \frac{r}{\rho})}{\rho * (1+g)^2 - (k-g) * \left(1 - \frac{r}{\rho}\right) * (1+g)}. \qquad (34)$$

In accordance with formulas (31-34), the elasticity of the dividend yield of an ordinary share of a public company by the return on investment of a public company, the market level of capitalization, the rate of return required by investors on an ordinary share of a public company and the assumed constant time rate of dividend growth on its ordinary share are influenced by the following factors: the return on investment of a public company, the market capitalization level, the rate of return required by investors on a common share of a public company, and the assumed rate of dividend growth per common share that is constant over time. Calculation of the influence of determining factors on the deviation of performance indicators in formulas (31-34) can be carried out using appropriate methods of factor analysis.

Elasticity models for the quoted ratio of a public company's ordinary share in terms of dividend and earnings per ordinary share ($E_D(P/E)$ и $E_E(P/E)$ соответственно), the ratio of dividends on ordinary and preferred shares of a public company ($E_{DCD}(P/E)$), its dividend coverage ratio on preferred shares ($E_{CPD}(P/E)$), the return on investment of a public company ($E_r(P/E)$), market the level of capitalization ($E_\rho(P/E)$), the rate of return required by investors per ordinary share of a public company ($E_k(P/E)$) and the dividend growth rate assumed to be constant in time per its ordinary share ($E_g(P/E)$) are respectively represented by formulas (35), (36), (37), (38), (39), (40), (41) and (42):

$$E_D(P/E) = \frac{D}{(P/E)} * \frac{\partial\left(\frac{P}{E}\right)}{\partial D} = \frac{\rho}{(k-g)*\frac{1-\frac{r}{\rho}}{1+g}-\rho}, \tag{35}$$

$$E_E(P/E) = \frac{E}{(P/E)} * \frac{\partial(P/E)}{\partial E} = 1, \tag{36}$$

$$E_{DCD}(P/E) = \frac{DCD}{(P/E)} * \frac{\partial(P/E)}{\partial DCD} = 1, \tag{37}$$

$$E_{CPD}(P/E) = \frac{CPD}{(P/E)} * \frac{\partial(P/E)}{\partial CPD} = \frac{CPD}{1-CPD}, \tag{38}$$

$$E_r(P/E) = \frac{r}{(P/E)} * \frac{\partial(P/E)}{\partial r} = \frac{\rho-\frac{k-g}{1+g}*(1-\frac{2*r}{\rho})}{\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g}}, \tag{39}$$

$$E_\rho(P/E) = \frac{\rho}{(P/E)} * \frac{\partial(P/E)}{\partial \rho} = \frac{\frac{k-g}{1+g}-2*\rho}{\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g}}, \tag{40}$$

$$E_k(P/E) = \frac{k}{(P/E)} * \frac{\partial(P/E)}{\partial k} = \frac{k*(1-\frac{r}{\rho})}{(1+g)*(\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g})}, \tag{41}$$

$$E_g(P/E) = \frac{g}{(P/E)} * \frac{\partial(P/E)}{\partial g} = \frac{g*(k+1)*(\frac{r}{\rho}-1)}{(1+g)^2*(\rho-(k-g)*\frac{1-\frac{r}{\rho}}{1+g})}. \tag{42}$$

Based on formulas (35) and (38-42), on the elasticity of the quoted ratio of an ordinary share of a public company on dividend per ordinary share, the dividend coverage ratio of a public company on preferred shares, the profitability of its investment, the market capitalization level, the rate of return required by investors on ordinary share of a public company and its assumed constant rate of dividend growth over time, its ordinary share is influenced by the following factors: dividend coverage ratio on preferred shares of a public company, return on investment of a public company, market capitalization level, the rate of return required by investors on ordinary share of a public company and the rate of dividend growth per ordinary share assumed to be constant over time. The calculation of the influence of determining factors on the deviation of effective indicators in formulas (35) and (38-42) can be carried out by the appropriate methods of factor analysis.

The sufficient complexity of the elasticity models developed by the author for key indicators of the activity of a public company in the stock market according to the main factors determining them in the context of a neutral approach to the implementation of dividend policy makes it difficult to determine the direction of the influence of these factors on the corresponding performance indicators without considering an example of the practical use of these models on a specific digital material.

Let us apply the elasticity models developed by the author of key indicators of the activity of a public company in the stock market in terms of the main factors determining them in the conditions of a neutral approach to the implementation of dividend policy (16-42) to the corresponding data of the public company Gamma (SPARK, 2024) (the real name has been changed), based on the assumption that it focuses on a neutral approach to dividend policy.

The values of some indicators of the public company "Gamma" at the end of the 2023 year are presented in Table. 2.

Table 2. Values of some indicators of the public company "Gamma" at the end of the 2023 year

Index	Meaning
Return on investment of a public company (r), %	23.9
Market capitalization level (ρ), %	15.3
Rate of return required by investors for an ordinary share of a public company (k), %	12
Dividend growth rate per ordinary share (assumed to be constant over time) (g), %	5
Earnings per ordinary share (E), rubles	157.48
Dividend per ordinary share (D), rubles	86.14
Dividend ratio for common and preferred shares (DCD)	23
Preferred Dividend Coverage Ratio (CPD)	60
Expected market price of an ordinary share (P), rubles	1294.73
Dividend yield ratio (DP), %	54.7
Dividend Cover Ratio (DC)	1.829
Dividend yield per share (DY), %	5.4
Common share price ratio (P/E)	7.256

Source: compiled by the author of the article

Based on contained in the Table 2 data were calculated according to the models (16-42) of the elasticities of the key indicators of the activity of the public company "Gamma" in the stock market (expected market price of an ordinary share (P), dividend output ratio (DP), dividend coverage ratio (DC), dividend common stock return (DY), common stock quote ratio (P/E)) by their main determinants (return on investment of a public company (r), market capitalization level (ρ), rate of return required by investors per ordinary share of a public company (k), assumed to be a time-constant growth rate of dividend per ordinary share (g), dividend per ordinary share (D), earnings per ordinary share (E), dividend ratio for ordinary and preferred shares (DCD), dividend coverage ratio for preferred shares (CPD)) presented in Table 3.

Table 3. Values of elasticity of key indicators of the activity of the public company "Gamma" in the stock market by the main factors determining them

Index	Determining Factors							
	r	ρ	k	g	D	E	DCD	CPD
P	0.016	-0.453	-0.335	0.00041	-	1	-	-
DP	0.453	-1.257	1.337	-0.612	-	-	-	-
DC	-0.453	1.256	1.401	6.249	-	-	-	-
DY	-0.453	0.163	0.335	-0.148	1	-1	–	–
P/E	1.552	-1.258	-0.335	0.148	-0.805	1	1	-1.017

Source: compiled by the author of the article

Contained in the Table 3 values of elasticities of the key indicators of the activity of the public company "Gamma" in the stock market according to the main factors determining them approximately show by what percentage upward ("+") or decrease ("-") the value of one or another key indicator will change depending on **1%** increments **the value** of one or another factor determining it.

For greater clarity, Table 4 shows the expected percentage changes in the values of key indicators of the activity of the public company "Gamma" in the stock market in the event of an increase / decrease in the value of each of the main factors determining them separately (with the values of all other factors unchanged) by 10%.

Table 4. Percentage changes in the values of key indicators of the activity of the public company "Gamma" in the stock market in the event of an increase / decrease in the value of each of the main factors determining them separately (with the values of all other factors unchanged) by 10%

Index	Determining Factors							
	r	ρ	k	g	D	E	DCD	CPD
P	+0.16	-4.53	-3.35	+0.0041	-	+10	-	-
	-0.16	+4.53	+3.35	-0.0041		-10		
DP	+4.53	-12.57	+13.37	-6.12	-	-	-	-
	-4.53	+12.57	-13.37	+6.12				
DC	-4.53	+12.56	+14.01	+62.49	-	-	-	-
	+4.53	-12.56	-14.01	-62.49				
DY	-4.53	+1.63	+3.35	-1.48	+10	-10	–	–
	+4.53	-1.63	-3.35	+1.48	-10	+10		
P/E	+15.52	-12.58	-3.35	+1.48	-8.05	+10	+10	-10.17
	-15.52	+12.58	+3.35	-1.48	+8.05	-10	-10	+10.17

Source: compiled by the author of the article

Then the predicted values of the key indicators of the activity of the public company "Gamma" in the stock market in the event of an increase / decrease in the value of each of the main factors determining them separately (with the values of all other factors unchanged) by 10% can be summarized in Table 5.

Table 5. Forecast values of key indicators of the activity of the public company "Gamma" in the stock market in the event of an increase / decrease in the value of each of the main factors determining them separately (with the values of all other factors unchanged) by 10%

Index	Determining Factors							
	r	ρ	k	g	D	E	DCD	CPD
P, rubles	1296.80	1236.08	1251.36	1294.78	-	1424.20	-	-
	1292.66	1353.38	1338.10	1294.66		1165.26		
DP, %	57.2	47.8	62.0	51.3	-	-	-	-
	52.2	61.6	47.4	58.0				
DC	1.746	2.059	2.085	2.972	-	-	-	-
	1.912	1.599	1.573	0.686				
DY, %	5.155	5.489	5.581	5.320	5.940	4.86	–	–
	5.645	5.312	5.219	5.480	4.860	5.94		
P/E	8.383	6.343	7.013	7.363	6.672	7.982	7.982	6.518
	6.130	8.169	7.499	7.149	15.306	6.530	6.530	7.994

Source: compiled by the author of the article

Concluding the consideration of the above example, it should be noted that in the context of a neutral approach to the implementation of the dividend policy of a public company, it allows not only to determine for a particular public company the degree of sensitivity of the values of key indicators of its activity in the stock market to changes in the values of the main factors determining them, but also the direction the impact of these factors on the key indicators of the dividend policy in the direction of increasing or decreasing their values. All this makes it possible to predict the values of key indicators of the activity of a particular public company in the stock market in the event of an increase / decrease in the value of each of the main factors determining them separately (with the values of all other factors unchanged) by a given percentage, if this public company adheres to a neutral approach to implementation dividend policy.

In addition, the models of elasticities of key indicators of the activity of a public company in the stock market built by the author of this article according to the main factors determining them (16-42) can be used as tools for managing the values of these elasticities by adjusting the values of the factors that determine them in a neutral approach to the implementation of the dividend policies of this public company.

Discussion

The scientific results considered in this article, obtained by its author and related to the development of models of elasticity of key indicators of the activity of a public company in the stock market according to the main factors determining them (16-42) in the context of a neutral approach to the implementation of the dividend policy of this public company, can be characterized as fundamentally new, unparalleled developments on this issue.

The fundamental novelty of the author's developments is determined by the fact that a neutral approach to the dividend policy of a public company was formulated, and the underlying models (5), (6), (11), (12) and (14) were again developed by the author of this article (in particular, (Krylov, 2020, 2021, 2025)).

Since analogues for comparison with the scientific results obtained by the author were not found in the relevant scientific literature, it seems appropriate to focus on the merits of the above models of elasticity of key indicators of the activity of a public company in the stock market in terms of the main factors determining them in the context of a neutral approach to the implementation of its dividend policy. manifested in the fact that these models:

- focused on maintaining a balance of interests of all stakeholders of a public company, contributing to its sustainable development;
- are based on a repeatedly tested and proven methodology;
- characterized by objectivity and rationality;
- make it possible to calculate the influence of determining factors on the deviation of the effective indicators determined by them by the appropriate methods of factor analysis;
- are effective tools for analyzing and forecasting the values of key indicators of the market activity of a public company, which makes it possible to rationalize and improve the process of managing it.

At the same time, since the elasticity models obtained by the author for key indicators of the activity of a public company on the stock market according to the main factors determining them in the conditions of a neutral approach to the implementation of its dividend policy are deterministic (functional) factor models, the accuracy of calculating the performance indicators depends solely on the adequacy of the reality of the indicators that determine them factors.

Also, the elasticity models of key indicators of the activity of a public company on the stock market according to the main factors determining them in the conditions of a neutral approach to the implementation of its dividend policy differ from existing models characterizing the position of a public company on the stock market and traditionally considered in the literature on financial management and corporate finance (Brealey, Mayers & Allien, 2011; Brigham & Houston, 2015; Brooks, 1996; Griewank, 2000; Lee & Finnerty, 1990; McLaney, 1992; Shim & Siegel, 2008; Van Horne, 1989; Van Horne & Wachowicz, 2009), according to the author, greater simplicity and clarity.

The computational complexity of the algorithm, according to the author, is not high enough, since the resulting models of elasticity of key indicators of the activity of a public company on the stock market according to the main factors determining them in the conditions of a neutral approach to the implementation of its dividend policy are based on arithmetic operations: addition, subtraction, multiplication and division. This allows computerization of these models using spreadsheets, for example, MS Excel.

As is well known, the main advantages and differences of spreadsheets lie precisely in the ease of use of data processing tools. And although data processing tools can be compared to databases in their capabilities, working with them does not require the user to have special programming training.

At the same time, it should be noted that there are certain limitations inherent in the elasticity models developed by the author of key indicators of the activity of a public company in the stock market in terms of the main factors determining them in the context of a neutral approach to the implementation of its dividend policy.

First, in accordance with these models, the change in the value of each of the main factors that determine the key indicators of the activity of a public company in the stock market is taken into account separately (isolated), that is, with the values of all other factors unchanged.

Secondly, these models are focused on the constant growth rate of dividends per ordinary share of a public company.

Thirdly, they proceed from a sufficiently high efficiency of the securities market.

Overcoming these limitations will be the subject of further research.

Conclusions

Summing up the consideration of models of elasticity of key indicators of the activity of a public company in the stock market according to the main factors determining them in the conditions of a neutral approach to the implementation of its dividend policy, which are the results of the research and development of the author of this article, it is advisable to formulate the following conclusions:

- the key indicators of the activity of a public company in the stock market in the context of a neutral approach to the implementation of its dividend policy should include dividend yield ratio, dividend coverage ratio, expected price of a common share, dividend yield of a common share, and quote ratio of a common share;
- models of elasticity of key indicators of the activity of a public company in the stock market in terms of the main factors determining them in the conditions of a neutral approach to the implementation of its dividend policy are built on the basis of models of these indicators developed earlier by the author;
- the construction of these models involved the use of the well-known and repeatedly tested mathematical apparatus of sensitivity analysis, associated with the calculation of the elasticities of performance indicators by the factors that determine them;
- the main factors that determine the key indicators of the activity of a public company in the stock market in the context of a neutral approach to the implementation of its dividend policy include the return on investment of a public company, the market level of capitalization, the rate of return required by investors per ordinary share of a public company, and the dividend growth rate assumed to be constant over time per ordinary share, dividend per ordinary share, earnings per ordinary share, ratio of dividends on ordinary and preferred shares, as well as the dividend coverage ratio on preferred shares;
- the constructed models make it possible to determine the elasticities of the key indicators of the activity of a public company in the stock market according to the main factors determining them in the context of a neutral approach to the implementation of its dividend policy and approximately show by how many percent the value of one or another key indicator will change upward or downward depending on an increment of **1% the value** of one or another factor determining it;
- these models can be used as sufficiently effective tools for analysis and forecasting, and, consequently, for managing the market activity of a public company in the context of a neutral approach to the implementation of its dividend policy.

Directions for Further Research

The above conceptual foundations for analyzing the sensitivity of key indicators of the activity of a public company in the stock market (market activity) to the main determining factors in the context of a neutral approach to the implementation of its dividend policy largely determine only some of its general outlines as a new direction of scientific research and practice. They are a kind of theoretical basis for further development of modeling the elasticity of key indicators of the activity of a public company in the stock market in terms of the main factors determining them in the context of a neutral approach to the implementation of its dividend policy.

The following can be considered as the main directions for further development of modeling the elasticity of key indicators of the activity of a public company in the stock market (market activity) according to the main determining factors in the context of a neutral approach to the implementation of its dividend policy:

- development of such models with a changing growth rate of dividends per ordinary share of a public company;
- building models of elasticity of key indicators of the activity of a public company in the stock market according to several main factors that determine them, acting jointly, interconnectedly and simultaneously, in the conditions of a neutral approach to the implementation of dividend policy: dividend yield ratio, dividend coverage ratio, expected price of an ordinary share, dividend yield of an ordinary share and quote ratio of an ordinary share - based on the models of the listed indicators (5), (6), (11), (12) and (14);
- derivation of calculation formulas that make it possible to determine the impact on the elasticity deviation of key indicators of a public company's activity in the stock market for each factor that determines them, acting in isolation, and for several main factors that determine them, acting jointly and simultaneously, in the conditions of a neutral approach to the implementation of dividend policy: the dividend yield ratio, the dividend coverage ratio, the expected price of an ordinary share, the dividend yield of an ordinary share and the quote ratio of an ordinary share, based on the relevant models;
- computerization of the elasticity models formed by the author of key indicators of the activity of a public company in the stock market according to the main factors determining them in the conditions of a neutral

approach to the implementation of dividend policy in order to more effectively use these models in practice in the process of managing the market activity of a public company.

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Debt Behavior and Financial Self-Efficacy: Are Men and Women Different?

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Background

Financial literacy has been shown to be an effective tool to improve various financial behavior (Servon & Kaestne, 2008; Mandell & Kermit, 2009; Xiao et al., 2014; Lusardi, 2019). However, research in behavioral economics has shown that education alone does not change behavior, as people have psychological characteristics that affect the effectiveness of education on behavior (Thaler & Sunstein 2008; Hira 2007; Zweig 2007). Financial self-efficacy is a domain specific psychological attribute that has been shown to have a significant relationship with improved financial behavior such as saving, credit card debt management, investment holdings, and portfolio allocation (Chatterjee et al. 2011; Lown et al. 2014; Joseph et al. 2015; Farrell et al. 2015). Although studies have shown consistently that financial self-efficacy helps improve credit card behavior, there is limited research on the relationship between financial self-efficacy and other aspects of debt behavior beyond credit cards. The 2018 Financial Capability report shows that credit card debt is not the only form of debt owed in the United States. This report shows that 35% of the sample had a mortgage, 26% had student loan debt, and 33% have an auto loan. Therefore, understanding how financial self-efficacy is associated with other debt behavior is important. Furthermore, comparing how this association is different for men and women is essential, as men and women tend to have different debt behavior (Almenberg et al., 2018; Mottola 2013; Robb 2011), and have different financial self-efficacy levels (Asebedo 2019).

Purpose

First, this study investigates the relationship between financial self-efficacy and debt behavior for credit cards, student loans, and mortgages. This study builds upon existing literature by examining how financial self-efficacy relates to debt behaviors for student loans and mortgages in addition to credit card debt. Second, this study investigates how the relationship between financial self-efficacy and debt behavior differs for men and women, by employing structural equation modeling framework to conduct a multigroup analysis.

Theory

The study uses the social cognitive theory of self-regulation by Bandura (1991) as the theoretical framework. According to Bandura (1991), self-efficacy has an impact on human behavior by interacting with the psychological sub functions of the self-regulatory system. These psychological functions which the self-regulatory system operates through are self-monitoring and self-observation processes, positive and negative judgements about performance results, and self-reactive influences. Based on this interaction between self-efficacy beliefs and the psychological functions of the self-regulatory system, self-efficacy influences how a person sets goals, observes behavior, judges performance, values activities and reacts to performance evaluations (Bandura, 1991). Financial self-efficacy is a domain specific self-efficacy. Therefore, in accordance with the Social Cognitive Theory of Self-Regulation by Bandura (1991), financial self-efficacy beliefs are expected to have a positive impact on the self-regulatory system, and show a positive relationship with controlled debt behavior for all forms of debt.

Hypotheses

Existing literature and Bandura's (1991) Social Cognitive Theory of Self-Regulation form the basis for the hypotheses below:

Hypthesis 1 (H1): Controlled debt behavior for credit cards, student loans, and mortgages, as measured by a combined latent construct for debt behavior, will have a positive relationship with greater levels of FSE.

Hypothesis 2 (H2): The relationship between financial self-efficacy and debt behavior is different between men and women.

Method

Data Source

This study uses data from the 2021 National Financial Capability Study (NFCS) a cross sectional data set provided by the Financial Institution Regulatory Authority (FINRA) Investor Education Foundation. The 2021 NFCS covered a nationally representative sample of 25,000 American adults (age 18 and over), including 500 individuals per state and Puerto Rico.

Sample

The final sample included 10,417 observations consisting of 5,476 women and 4,941 men after restricting to respondents who had responses such as "I don't know" and "Prefer not to say" for all the questions used to measure debt behavior and financial self-efficacy.

Analysis

This study employed structural equation modeling (SEM) with a confirmatory factor analysis (CFA) measurement model using R. A multigroup analysis was done to test if the relationship between financial self-efficacy and debt behavior is different between men and women. The missing data technique employed was Full Information Maximum Likelihood (FIML).

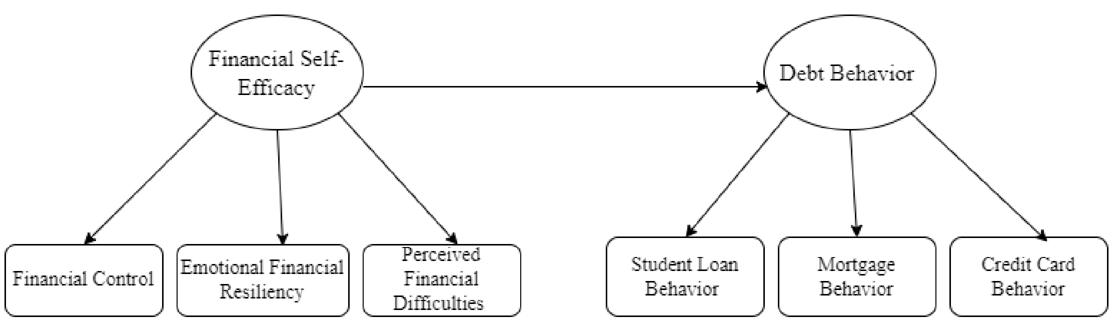

Figure 1. The Estimated Model

Note. This model is tested for two different groups (men and women)

Variables

Outcome Variable

Financial self-efficacy is measured as a latent construct with three predictors: perceived financial control, emotional financial resiliency (proxied by financial satisfaction), and perceived financial ease.

Main Explanatory Variable

Debt behavior is measured as a latent construct with three predictors: student loan behavior (being late with student loan payments), mortgage behavior (being late with mortgage payments) and credit card behavior (a parcel consisting of whether or not respondents made only minimum payments, were assessed late payments fees, were assessed over the limit fees, exceeded their credit line, and used credit cards for cash advance)

Control Variables

Race (white, nonwhite), marital sttaus (married, unmarried), income (10 categories), objective financial knowledge scores, and subjective financial knowledge (7 categories). Control variables were included in the analysis using the full-partial method (Little, 2013).

Sample Characteristics

Table 1 shows the descriptive statistics for the entire sample. The sample is slightly skewed more towards women (53%), white (74%) and married (76%) respondents. Also, about 49% of the sample earn between $75,000 and $150,000. Most of the sample have financial control, are financially satisfied (experience emotional and financial resiliency), and do not experience difficulty paying their bills. With debt, on average, respondents in the sample seem to have somewhat positive student loan, mortgage, and credit card behavior. Specifically, 62% of the respondents have never missed a student loan payment, 65% have never missed mortgage payments, 71% have never used their credit card for a cash advance, 73% have never been charged an over-the-limit fee, and 68% have never been charged a late fee on their credit card. However, 65% of the respondents report carrying credit card balances, and 54% report paying only the minimum payments on their credit cards. Regarding financial knowledge, while only 7% of the respondents provided correct answers to all the objective financial knowledge questions, 25% perceived their financial knowledge to be very high.

Table 1.

Descriptive Characteristics for Full Sample (N = 10,417)

Variables	Proportion of Sample

Gender:	
Women	53%
Men	47%
Race/Ethnicity:	
White	74%
Nonwhite	26%
Marital Status:	
Married	76%
Unmarried	24%
Income:	
Less than $15,000	2%
$15,000 - $24,999	2%
$25,000 - $34,999	4%
$35,000 - $49,999	7%
$50,000 - $74,999	16%
$75,000 - $99,999	21%
$100,000 - $149,999	29%
$150,000 - $199,999	12%
$200,000 - $299,999	5%
$300,000+	1%
Subjective Financial Knowledge:	
1 (Very Low)	0.3%
2	0.4%
3	4%
4	13%
5	30%
6	26%
7 (Very High)	25%
Objective Financial Knowledge Scores:	
0	3%
1	9%
2	19%
3	23%
4	23%
5	15%
6	7%
Financial Control:	
1 ((Strongly disagree)	1%
2	1%
3	2%
4	9%
5	16%
6	28%
7 (Strongly agree)	41%
Emotional Financial Resiliency:	
1 (Not at all satisfied)	4%
2	1%
3	6%
4	7%
5	10%
6	12%

7	18%
8	13%
9	8%
10 (Extremely satisfied)	20%
Perceived Financial Ease:	
1 (Very difficult)	14%
2	35%
3 (Not at all difficult)	50%
Student Loan:	
1 (Never been late)	26%
2 (Been late once)	12%
3 (Been late more than once)	62%
Mortgage Loan:	
1 (Never been late)	20%
2 (Been late once)	15%
3 (Been late more than once)	65%
Pay Credit Card Balance in Full:	
Yes	55%
No	45%
Carried Balance on Credit Card:	
Yes	34%
No	66%
Paid Minimum Payment on Credit Card:	
Yes	46%
No	54%
Charged Late Fee on Credit Card:	
Yes	68%
No	32%
Charged Over the Limit Fee on Credit Card:	
Yes	73%
No	27%
Used Credit Card for Cash Advance:	
Yes	71%
No	29%

The descriptive statistics comparing the men and women sample is presented in Table 2. A higher proportion of the male sample is married, white, and report earning higher incomes. Interestingly, while a higher proportion of the women report having higher control over their finances than the men, more men report being financially satisfied (experiencing emotional and financial resiliency) and having less difficulty paying bills than women. When it comes to debt behavior, while more men in the sample have missed student loan and mortgage payments at least once, more women in the sample carry a balance on their credit card and have been charged both a late fee and over the limit fee and used their credit cards for a cash advance. In comparison, more men pay their credit cards in full. Conversely, a higher proportion of men provided correct answers to all the objective financial knowledge questions, and an even higher proportion of men assessed their financial knowledge to be very high.

Table 2.

Descriptive Characteristics (Men vs Women Sample)

Variables	Men	Women
N	4,941	5,476
Race/Ethnicity:		
White	77%	70%
Nonwhite	23%	30%
Marital Status:		
Married	78%	72%
Unmarried	22%	28%
Income:		
Less than $15,000	2%	2%
$15,000 - $24,999	1%	3%
$25,000 - $34,999	3%	6%
$35,000 - $49,999	6%	8%
$50,000 - $74,999	15%	18%
$75,000 - $99,999	20%	22%
$100,000 - $149,999	30%	27%
$150,000 - $199,999	1215%	8%
$200,000 - $299,999	6%	4%
$300,000+	2%	1%
Subjective Financial Knowledge:		
1 (Very Low)	0.6%	0.9%
2	0.4%	0.4%
3	2%	6%
4	9%	20%
5	27%	33%
6	28%	24%
7 (Very High)	32%	16%
Objective Financial Knowledge Scores:		
0	3%	4%
1	8%	12%
2	18%	22%
3	21%	25%
4	23%	22%
5	19%	11%
6	9%	4%
Financial Control:		
1 (Strongly disagree)	0.6%	1%
2	1%	1%
3	3%	3%
4	8%	9%
5	14%	20%
6	30%	26%
7 (Strongly agree)	44%	38%
Emotional Financial Resiliency:		
1 (Not at all satisfied)	3%	7%
2	0.4%	3%

3	5%	7%
4	6%	10%
5	9%	13%
6	12%	12%
7	18%	17%
8	14%	12%
9	9%	7%
10 (Extremely satisfied)	24%	13%
Perceived Financial Ease:		
1 (Very difficult)	18%	9%
2	30%	42%
3 (Not at all difficult)	51%	49%
Student Loan:		
1 (Never been late)	28%	23%
2 (Been late once)	12%	11%
3 (Been late more than once)	59%	66%
Mortgage Loan:		
1 (Never been late)	25%	13%
2 (Been late once)	16%	14%
3 (Been late more than once)	59%	73%
Pay Credit Card Balance in Full:		
Yes	62%	44%
No	38%	56%
Carried Balance on Credit Card:		
Yes	36%	32%
No	64%	68%
Paid Minimum Payment on Credit Card:		
Yes	45%	47%
No	55%	53%
Charged Late Fee on Credit Card:		
Yes	66%	71%
No	34%	29%
Charged Over the Limit Fee on Credit Card:		
Yes	69%	79%
No	31%	21%
Used Credit Card for Cash Advance:		
Yes	66%	79%
No	34%	21%

Results

Measurement Model and Model Fit

The Confirmatory Factor Analysis (CFA) measurement model showed statistically significant loadings above 0.3 across all the indicators used in the analysis (Brown, 2015). Wholistically, given the CFI , TLI, SRMR, and RMSEA (Kline, 2016). Even though the TLI and CFI of the CFA model is below the expected target of 0.9, the CFA model has an acceptable fit given the low SRMR of 0.058 as well as the post-hoc nature of some of the scales used. When novel scales are used, or scales are created post-hoc from existing items not originally intended to be used as scales, the heuristics of acceptable fit can be relaxed (Little, 2024).

Invariance Tests

The fit statistics derived from the CFA model for the partial invariance tests is presented in Table 3. Largely, each tested model (configural, weak, and strong) demonstrates an acceptable fit (Little, 2013). The heuristic of a change in CFI of .01 or less is used to evaluate whether a model passes invariance test (Little, 2024). Using this threshold, both weak invariance (ΔCFI = 0.002) and strong invariance (ΔCFI = 0.005) pass in our sample (see table 3).

Table 3

Invariance Tests

Model Tested	*p*	*CFI*	ΔCFI	TLI	SRMR	RMSEA	Pass
Configural Invariance	<0.001	0.875		0.766	0.054	0.119	
Weak Invariance	<0.001	0.873	**.002**	0.788	0.056	0.113	**Yes**
Strong Invariance	<0.001	0.868	**.005**	0.802	0.058	0.109	**Yes**

Structural Model Results

Figures 2 and 3 display the result for the structural model showing the relationship between financial self-efficacy and debt behavior for men and women in the U.S. This study finds a statistically significant (at the 1% level) positive association between financial self-efficacy and debt behavior for both men and women. Precisely, the results show that an increase in financial self-efficacy is associated with a 0.81 increase in positive debt behavior of the female respondents. Similarly, an increase in the financial self-efficacy of the male respondents is associated with a 0.76 increase in their positive debt behavior. Meaning men and women with higher financial self-efficacy are more likely to engage in positive debt behavior, with the relationship between financial self-efficacy slightly higher in women.

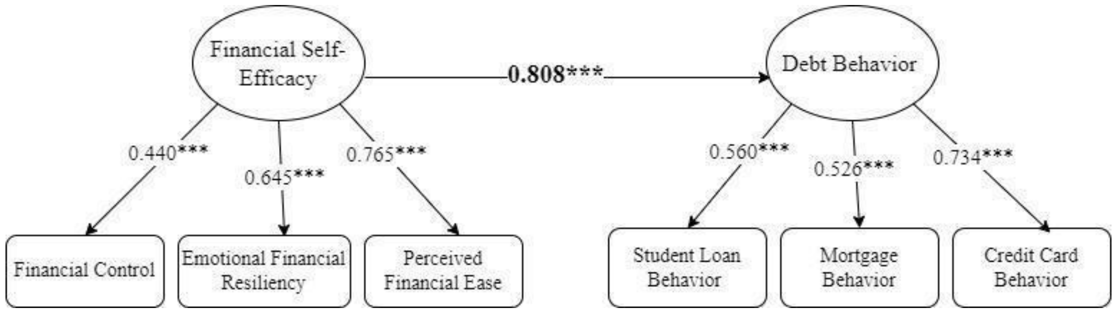

Figure 2. Women: Structural Model Results

Note: Standardized results are provided. Model fit RMSEA = 0.082, SRMR = 0.063, CFI = 0.894; TLI = 0.747. *** *p*<0.001;** *p*<0.01; * *p*<0.05. *N* =5,476.

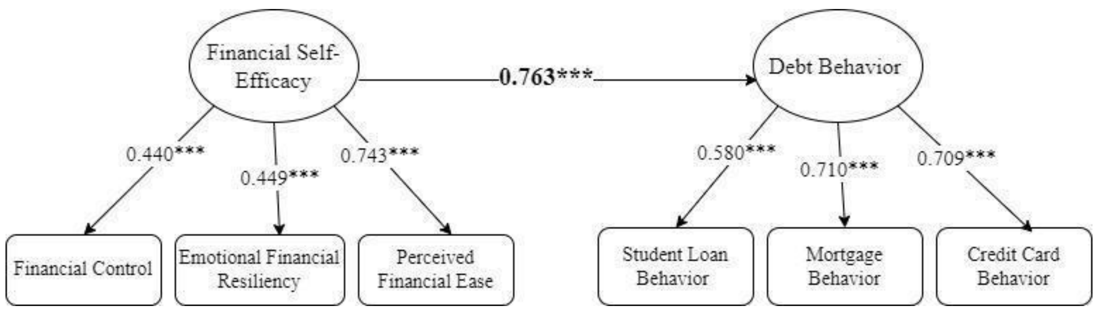

Figure 3. Men: Structural Model Results

Note: Standardized results are provided. Model fit RMSEA = 0.082, SRMR = 0.063, CFI = 0.894; TLI = 0.747. *** *p*<0.001;** *p*<0.01; * *p*<0.05. *N* =4,941.

Turning to covariates, as shown in Table 4, for the female sample, the only statistically significant covariates were white and objective financial knowledge, with income and subjective financial knowledge being marginally significant. Specifically, women who are white, earn higher, and score higher on the financial knowledge questions are more likely to exhibit positive debt behavior. Interestingly, women who rate their financial knowledge higher are less likely to engage in positive debt behavior.

Table 4

Structural Model Results for Effects of Covariates on Debt Behavior

Variables	Men	Women
N	4,941	5,476
White (Ref = nonwhite)	0.010	0.116***
	(0.012)	(0.012)
Married (Ref = Unmarried)	0.018	-0.004

	(0.012)	(0.012)
Income (Ref =Less than $15,000)		
$15,000 - $24,999	0.071**	0.022
	(0.039)	(0.032)
$25,000 - $34,999	0.037	0.037
	(0.036)	(0.031)
$35,000 - $49,999	0.062*	0.062*
	(0.033)	(0.029)
$50,000 - $74,999	0.081*	0.087*
	(0.032)	(0.029)
$75,000 - $99,999	0.082*	0.066*
	(0.032)	(0.030)
$100,000 - $149,999	0.051	0.071*
	(0.033)	(0.031)
$150,000 - $199,999	0.015	0.062**
	(0.035)	(0.036)
$200,000 - $299,999	0.024	0.032
	(0.039)	(0.044)
$300,000+	0.021	-0.005
	(0.050)	(0.056)
Objective Financial Knowledge Score	0.305***	0.187***
	(0.004)	(0.004)
Subjective Financial Knowledge (Ref = Very Low)		
2	0.018	-0.033
	(0.077)	(0.060)
3	0.005	-0.026
	(0.066)	(0.050)
4	-0.002	-0.036
	(0.062)	(0.047)
5	0.002	-0.065
	(0.061)	(0.046)
6	-0.037	-0.079
	(0.062)	(0.047)
7 (Very High)	-0.240**	-0.178***
	(0.063)	(0.049)

Note. Standardized results are provided. Model fit RMSEA = 0.082, SRMR = 0.063, CFI = 0.894 TLI = 0.747. *** $p<0.001$;** $p<0.01$; * $p<0.05$. N =10,417.

Similarly, in the male sample, as displayed in Table 4, the only statistically significant covariate is objective financial knowledge, with income and subjective financial knowledge being marginally significant. In other words, while men who score higher in objective financial knowledge are more likely to depict positive debt behavior, men who assess their financial knowledge as very high are less likely to depict positive debt behavior.

Furthermore, to test that the relationship between financial self-efficacy and debt behavior is truly different for men and women, a chi-square difference test is carried out and presented on Table 5. The results affirm that the relationship is slightly but significantly higher among women (p-value = 0.0000), with the women sample having a coefficient of 0.81 and the male sample having a coefficient of 0.76.

Table 5

Chi-square Difference Test

Model Tested	χ^2	df	$\Delta\chi^2$	p	Decision
Model 1 (paths freely estimated)	8229.2	230		<0.001	
Model 2 (paths constrained to be equal)	8278.2	**232**	48.977	<0.001	**Different**

Discussion and Implications

Using the 2021 National Financial Capability Study, this study analyzed the association between financial self-efficacy and various forms of debt behavior and how this may differ for men and women. Results from the show that there is a significant positive association between controlled debt behavior and financial self-efficacy. This result is consistent with the a priori expectations and the findings of Joseph et al. (2015) and Farrell et al. (2015), although they focused on credit card debt.

This study also finds that the association between financial self-efficacy and controlled debt behavior is stronger for women than men. This finding is interesting as Asebedo (2019) found that women have a stronger financial self-efficacy than men. However, McAvay et al. (1996) showed that women are more likely to experience a decline in financial self-efficacy. These results have implications for financial professionals: developing and supporting clients' financial self-efficacy throughout the counseling and planning process, especially for female clients.

To encourage clients to develop financial self-efficacy, financial counselors and planners can educate clients on the importance of financial self-efficacy to their financial health and lead to improved debt behavior. Financial counselors and planners can focus on strategies that boost and maintain women's self-efficacy, such as affirming positive outcomes and praising them when they reach unattainable goals. These strategies would benefit the women since McAvay et al. (1996) find that women experience declining financial self-efficacy.

Also, since financial literacy has been linked severally to financial self-efficacy (Rothwell et al, 2018), a great way to boost financial self-efficacy is through targeted financial education programs. Tailored financial education sessions on financial literacy, debt management, saving, and investing tailored to assess and overcome any societal, cultural, and psychological barriers women may face with financial self-efficacy and managing their finances might be beneficial. Financial counselors and planners can also develop debt management and budgeting strategies that cater to different women at various stages. For instance, the debt management strategy for a single mother with a low income would be different for a married mother with similar circumstances.

This study has some limitations. One limitation is grouping genders into just men and women and ethnicity into just white and non-white. This grouping is majorly due to the secondary nature of the data set. Future research can benefit from collecting primary data that is inclusive in terms of gender and ethnicity. Also, although the model fit is acceptable (Kline, 2016), it is not an ideal fit. The use of secondary data also causes this limitation, and Little (2024) explains that when novel scales are used, or scales are created post-hoc from existing items not originally intended to be used as scales, the heuristics of acceptable fit can be relaxed. Nonetheless, the literature has consistently applied structural equation modeling to secondary data sets.

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Review: 2D [Title Here, up to 12 Words, on One to Two Lines]

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Abstract

Two-dimensional visualizations are heavily used in delivery of education in both formal and informal contexts. However, the impact and utility of visualizations in these contexts is difficult to broadly assess due to the variance of specific design features, how visual stimuli are perceived (e.g., color), and working memory limitations for individual learners. This review looks at prior research using visualizations in a variety of subjects to better identify the affordances and limitations of using two-dimensional visual media to support engagement, interest development, and self-regulated learning in financial education and other applications.

Keywords: engagement, financial education, interest development, self-regulated learning, visualizations

Background

Visualizations have long been used in education to support conceptual understanding across multiple domains. Educators use two-dimensional (2D) visualizations to advertise programs and services, as illustrative aids to discuss relationships between concepts, as scaffolding for guiding learning, and even to assess conceptual understanding with learner-generated imagery. Since personal finance requires continual life-long learning, it's important that financial education is intentionally designed to encourage engagement, interest development, and self-regulated learning. Incorporating 2D visual media into financial education delivery with intention can support the cognitive mechanisms needed to continue engaging with financial content throughout a learner's life.

Defining Cognitive Terms

In educational psychology, understanding cognitive aspects of learning is critical to the design of any educational intervention. This review explores the efficacy of visualizations in supporting engagement, interest development, and self-regulated learning. Each of these constructs may be precursors to behavioral change, a core outcome intention of many financial education interventions. Although these constructs are heavily related to each other, they also have clear differences that make them unique elements of the learning process.

Engagement

Definitions of engagement vary within the field of education and depend on how it is operationalized. Concepts and terms related to the construct of engagement have been used interchangeably across different publications (Azevedo, 2015; Flowerday & Shell, 2015; Fredricks et al., 2004; O'Brien & Toms, 2008; Renninger et al., 2018; Renninger & Bachrach, 2015; Renninger & Hidi, 2016). The elements that are typically used to define engagement include behaviors (interaction with learning objects or completion of learning tasks), affects or emotions (interest), and cognition (attention, motivation). Understanding these dynamic qualities of engagement can inform its measurement, use in instructional design, and relationship with learning.

School engagement consists of three separate but related definitions of engagement, including behavioral, emotional, and cognitive (Fredricks et al., 2004). *Behavioral engagement* describes actions of students indicating some level of engagement, like following school rules, participating in class discussions or asking questions, extracurricular involvement, and a lack of disruptive behaviors – all things that are often able to be observed. *Emotional engagement* revolves around affective aspects of learning, like interest, boredom, sadness, happiness, and anxiety. *Cognitive engagement* refers to effort, strategy, and motivation which has been over-generalized in some empirical studies according to Fredricks et al. (2004). ***School engagement*** focuses on the markers of engagement in a formal learning environment, which can inform approaches to the design of informal learning experiences, like online personal finance education interventions targeting consumers.

Engagement can also be described as a psychological process with a cyclical nature. As seen in Table 1, qualitative research on user engagement with technology has identified *threads of experience* (compositional, sensual, emotional, and spatiotemporal) associated with the different stages of engagement including: initiation, period of engagement, disengagement, reengagement, and nonengagement (O'Brien & Toms, 2008, p.948).

Table 1. *Summary of the engagement attributes according to the threads of experience.*

	Compositional Thread		
	Process of Engagement		
Threads of Experience	Point of engagement (and Reengagement)	Engagement	Disengagement
Sensual	• Aesthetic elements are pleasing or attention getting • Novel presentation of information	• Graphics that keep <u>attention</u> and <u>interest</u> or evoke realism • "Rich" interfaces that promote awareness of others or <u>customized views</u> of information	• Inability to <u>interact</u> with features (usability) • Lack of/too much <u>challenge</u>
Emotional	• Motivation to accomplish a task or to have an experience • Interest	• Positive affect: enjoyment, fun, physiological arousal	• <u>Negative affect:</u> Uncertainty, information overload, frustration with technology, boredom, guilt • <u>Positive affect:</u> Feelings of success and accomplishment
Spatiotemporal	• Becoming situated in the "story" of the application • Ability to take one's time in using the application	• Perception that time passed very quickly • Lack of <u>awareness</u> of physical surroundings • Strong <u>awareness</u> of others when the engagement revolved around social interaction • <u>Feedback</u> and <u>control</u>	• Not having sufficient time to interact with or time to devote to the application • <u>Interruptions</u> and distractions in physical environment

Note. From "What is user engagement? A conceptual framework for defining user engagement with technology," by H. L. O'Brien & E. G. Toms, 2008, *Journal of the American Society for Information Science and Technology, 59*(6)p. 948.

The *compositional thread* references the beginning (point of engagement), middle (engagement), and end (disengagement) of an engaging experience. ***Nonengagement***, which is not present in Table 1, describes when a user or learner is not engaged or is unable to become engaged, possibly due to barriers in the environment. Similarities between this work by O'Brien & Toms (2008) and School Engagement (Fredricks et al., 2004), illustrate how certain aspects of engagement are maintained even when viewed from different perspectives. These include cognitive, emotional, and behavioral aspects of engagement, like perception, attention, affect, interest, and motivation.

As seen in Figure 1, it has also been suggested that engagement exists as a *continuum* where cognitive, emotional, behavioral, and agentic dimensions can be measured together while acknowledging the overlap in the nature of these dimensions (Sinatra et al., 2015, p. 9). This continuum acknowledges the person-oriented aspects of engagement measurement (e.g., response time, strategic behaviors, trace data) as well as the person-in-context (e.g., experience

sampling, observations of interactions) and context-oriented (e.g., discourse analysis, teacher ratings, cultural & critical analyses) measurements.

Definitions for engagement and interest are often intertwined but rarely described as separate constructs (Flowerday & Shell, 2015; Renninger et al., 2018; Renninger & Bachrach, 2015; Renninger & Hidi, 2016). Even though both engagement and interest are initiated, or triggered, through attention, it is possible for someone to be *behaviorally* engaged with a topic but not to be interested (or *cognitively* engaged) in it (Renninger & Bachrach, 2015).

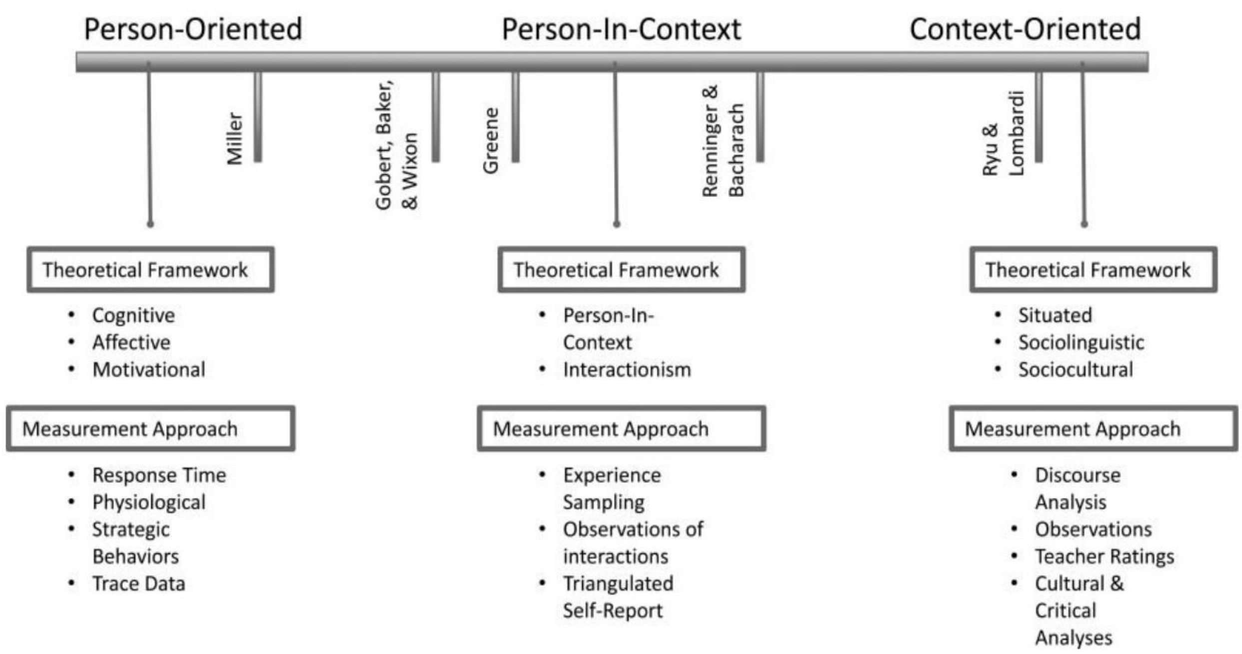

Figure 1. Continuum of engagement measurement. Note. From "The challenges of defining and measuring student engagement in science," by G.M. Sinatra, B.C. Heddy, & D. Lombardi, 2015, Educational

Interest

Interest is a valuable contributor to engagement and motivation throughout the learning process. It has been described as a psychological state and motivational variable contributing to reengagement with a topic or object (Hidi & Renninger, 2006; Krapp, 2002; Renninger & Hidi, 2011). Additionally, interest can be value-oriented or exist as a taxonomy of topics that a person is predisposed to interact with (Ainley, 2019). For example, the "person-object theory of interest" (POI), in particular, considers personal interests, or individual interests, as they relate to personality development (Krapp, 2002).

Interest as a psychological state has multiple dimensions. The four-phase model of interest includes individual and situational components in addition to a fluency in the intensity and time a person is interested in a topic (Hidi & Renninger, 2006). ***Triggered situational*** *interest* may be brief as it has external triggers which may or may not relate to prior experience. Positive or negative affect could be involved in this phase of interest development as well. For example, someone's interest in estate planning may be triggered by the loss of a loved one, indicating a trigger highly correlated with grief. Or, someone may become interested in investing after learning about the time value of money and the potential to grow wealth with compound interest which can be exciting for some individuals. ***Maintained situational interest*** requires sustained, focused attention over an extended period, though it can also have external initiations like triggered situational interest. However, the interaction is more meaningful to the individual and tends to have a positive emotional element. Studies on middle school, high school, and undergraduate students have identified (1) triggered situational interest, (2) affective maintained situational interest, and (3) value-related maintained situational interest as three unique elements of *situational interest* (Linnenbrink-Garcia et al., 2010). In this case, maintained situational interest may be present due to an emotion (affect) or the value that a person assigns to that topic or object (value-related). ***Emerging individual interest*** involves a relatively long-term predisposition to repeatedly engage with content over time and results in stored knowledge and value to the individual. This phase of interest is often, though not always, self-generating. To transition to the next phase of interest development (well-developed individual interest), external support, like peers, experts, or other social supports, may be required, particularly as challenges arise. ***Well-developed individual interest*** correlates to positive feelings, more stored knowledge, and value, as well as self-regulation and perseverance to search for answers to self-generated questions about a topic. This phase of interest may require the individual to be reflective and seek feedback to improve content-specific knowledge or skills. Despite more knowledge being associated with individual interest, no evidence has been found to support a reciprocal relationship between knowledge and individual interest (Rotgans & Schmidt, 2017), meaning more knowledge acquisition does not necessarily lead to an increase in interest.

In terms of financial education, encouraging well-developed individual interest about personal finance topics requires building community and making subject matter experts available for learners to continue engaging with the content after interest is triggered, maintained, and begins developing into the emerging interest phase.

Both interest and engagement may rely on attentional cues (Magner et al., 2014; Renninger & Bachrach, 2016) and have cognitive and affective characteristics which vary in intensity when measured over time (Fastrich & Murayama, 2020). For example, decorative illustration has been found to support triggering situational interest for learners with limited and high levels of prior knowledge but the additional cognitive load of processing decorative illustrations for those with limited prior knowledge can inhibit learning and does not result in maintained situational interest (Magner et al., 2014). Two-dimensional visual elements added to presentations, websites, or online courses with the intention of grabbing attention may need to be limited to reduce unnecessary drain on learners' cognitive resources. Growth-curve modeling on adults' rating of interest throughout an online intervention showed an increase in situational interest until it eventually peaks and then declines; however, the option of choice was found to support interest growth and delay declines in situational interest (Fastrich & Murayama, 2020).

In contrast to engagement, interest is always content-specific (Krapp & Prenzel, 2011). It has also been described as an emotional state related to curiosity which is often recognized as a relatively stable personality trait (Ainley, 2019). Interest may be best viewed as a motivational variable, as illustrated in Figure 2 (Harackiewicz et al., 2016, p. 222), that can lead to engagement and can support [self-regulated] learning. However, "it is not clear if interest does indeed cause knowledge gain." (Rotgans & Schmidt, 2017, p. 351).

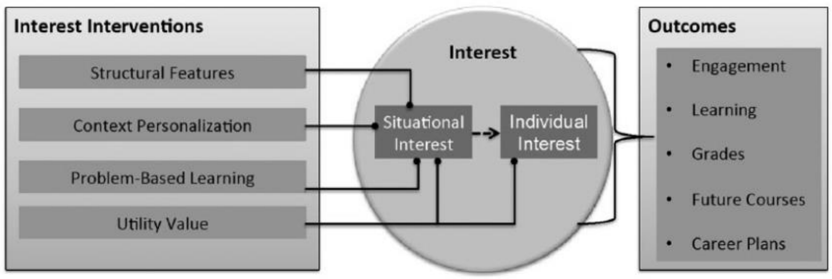

Figure 2. Conceptual model showing how interventions promote interest development and subsequent educational outcomes. Note. From "Interest matters: The importance of promoting interest in education," by J.M. Harackiewicz, J.L. Smith, & S.J. Priniski, 2016, Policy Insights from the Behavioral and Brain Sciences, 3(2), 222.

Self-Regulated Learning

Along with engagement and interest, self-regulated learning involves many cognitive processes. Self-regulated learning is the metacognitive management of one's intrinsic learning processes which includes reflection, assessment, and modification of behavior to increase future success in knowledge gain (Bjork et al., 2013; Winne, 2022).

Self-regulated learning and self-directed learning are often used interchangeably. Although they are closely related, a recent review of literature addressing the definitions of these terms revealed "that many scholars have found [Self-directed Learning] to be a control over the external learning environment, with the focus of [Self-regulated Learning] to be internal" (Linkous, 2021, p.120). In informal learning, self-directed learning is viewed as a core element to understanding and supporting learners in contexts outside of formal learning (Song & Bonk, 2016). The following aspects could be found as key factors in motivation and self-directed learning: (1) freedom and choice, (2) control, and (3) interest and engagement. Motivation for engaging in self-directed informal learning has been found to be primarily due to interest in the topic (91.7%), curiosity (88.1%), among other intrinsic reasons, but extrinsic factors were also noted, including class/homework, etc. (58.3%) and ease of access to the website (58.3%) (Song & Bonk, 2016).

To engage in self-regulated learning, according to Winne (2022), individuals need: (1) access to declarative knowledge, (2) to perform learning activities without excessive effort; (3) a broad understanding of tactics and strategies that fit different learning outcomes; (4) benchmarks and tools to measure success of learning; (5) data about their own performance for identifying success; and (6) methods to manipulate data about their performance to identify patterns and opportunities for future improvement.

A variety of acronym-based models have been used to describe the cognitive processes and tasks involved with self-regulated learning. COPES model of learning tasks, the AEIOU model of theorizing about learning, and the SMART model of cognitive operations have been proposed together as a basis for helping learners think about their own learning as illustrated in Figure 3 (Winne, 2022, p. 780). COPES model of learning tasks includes **conditions** (environmental factors and internal factors), **operations** (activities that support learning), **products** (new or constructed knowledge), **evaluations** (reflection on performance or products), and **standards** (what the learner compares their performance or products to during evaluation). The SMART model of cognitive operations refers to **searching** (involves introspection to compare new information to stored memory), **monitoring** (identifies similarities between what is known and what is being learned), **assembling** (combines new information with previously stored knowledge), **rehearsing** (leverages working memory to copy the new knowledge product), and **translating** (changes input to an output that modifies the structure to save important features, remove others, and potentially add new features) information. AEIOU is a mnemonic model that identifies how learners can regulate motivation and emotions while learning, where A = attribution, E = efficacy expectation, I = incentive, O = learner's outcome expectation, and U = utility (Winne & Marzouk, 2019). **Attribution** refers in this model to identifying what contributed to the success or failure of learning new content. **Efficacy expectation** has to do with the degree to which a learner expects to succeed based on the tactics or strategies they engage in to support learning. **Incentives** identify the value associated with the product of a learning task. A learner's **outcome expectation** has to do with the result of IF (operation), THEN (product). And **utility** is the judgement across all dimensions of self-regulated learning for how successful each activity was at producing knowledge (the product).

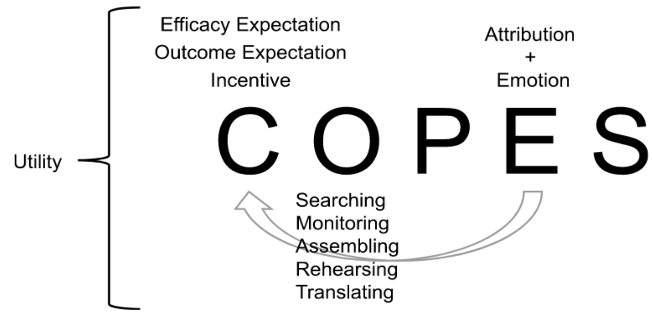

Figure 3. The SMART, COPES, and AEIOU models. Note. From "Modeling self-regulated learning as learners doing learning science: How trace data and learning analytics help develop skills for self-regulated learning" by P. H. Winne, 2022, Metacognition Learning, 17(3), p. 780

Engagement, interest, and self-regulated learning are intertwined throughout the educational process, especially in informal learning scenarios. A summary of each construct, their similarities, and unique differences is highlighted in Table 2. Engagement is identified by behaviors, emotions and cognition indicating attentional resources being dedicated to something, be that a person, idea, situation, or institution (e.g., school). Interest is both a dynamic psychological state and motivational variable that contributes to engagement or re-engagement with a topic. In addition to having multiple phases of interest with varying value to an individual, it can also exist as a taxonomy of topics a person is predisposed to interact with. Self-regulated learning is the metacognitive management of an individual's personal learning process which includes reflection, assessment, and modification of behavior to increase future successful knowledge gain. Emotions and cognition modulate both engagement and interest, which can also impact self-regulated learning since interest, engagement, and self-regulated learning all rely on attention and may vary in intensity over time. Intensity of an interest may vary depending on the phase or type of interest being measured. Additionally, engagement, interest, and self-regulated learning can all be described as mental states where engagement and interest may lead to self-regulated learning about a topic or within a specific environment.

Table 2. *Working Definitions and Comparisons of Engagement, Interest, and Self-regulated Learning.*

Construct	Definition	Similarities	Differences
Engagement	Behaviors, emotions, and cognition indicating attentional resources being dedicated to a person, concept, situation, or institution (e.g., school).	Emotions and cognition are relevant to both engagement and interest.	Someone can be behaviorally engaged without being cognitively interested.
Interest	A dynamic psychological state that motivates engagement or re-engagement with a topic. It can be value oriented or exist as a taxonomy of topics that a person is predisposed to interact with.	Interest, engagement, & self-regulated learning rely on attention and may vary in intensity over time, depending, for example, on the phase or type of interest being measured.	Interest is always content-specific and *can* build over time but may peak and decline.
Self-regulated Learning	Metacognitive management of one's own learning processes which includes reflection, assessment, and modification of behavior to increase future success in knowledge gain.	Interest, engagement, and self-regulated learning can be described as mental states. Engagement and interest may lead to self-regulated learning about a topic or within a specific environment.	Self-regulated learning requires introspection in order to inform future behavior. Engagement and interest may not involve metacognition in the same way.

Visualizations in Education

Visualization can be interpreted in a plethora of ways and is commonly used as a catch-all term to refer to a visual element (or series of elements) developed to communicate information. Most commonly, it is used in reference to data visualizations. However, the term can apply to animations, illustrations, concept or geospatial maps, tables, graphs, diagrams, photographs, and even formatting of text. A broad spectrum of visualizations have been used to enhance cognitive understanding (Kothakota & Kiss, 2020; Pousman et al., 2007), guide attention (Kim & Fritsch, 2019), search for information (Godehardt, 2009), inform decisions, motivate behavior change (Jin, 2017; Kersten-van Dijk et al., 2017), inspire us through artistic interpretations of information (Viégas et al., 2007; Viégas & Wattenberg, 2007; Wattenberg et al., 2007), and help us with many aspects of daily life (Pousman et al., 2007).

Categorization of Visualizations is Challenging

An *inclusive* taxonomy describing the broad scope of visualization categories, their visual features, and their utility in clearly communicating concepts does not seem to exist in the current literature. The taxonomies that have been developed primarily address data-driven visualizations (Chi, 2000) or high-level user preferences by type of task associated with a visualization (Morse et al., 2000). Categorizing visualizations can be difficult since a single visualization may encompass several different characteristics. Additionally, the same visualization could be interpreted in different ways across domains (known as polysemy) (Van Eijck et al., 2011). Visual media has also been criticized as being ambiguous compared to the depth of knowledge that can be gleaned from explanatory text (Carifio & Perla, 2009). Despite these challenges and the innumerable methods of displaying information visually, there are strategies and tools that have been developed to help guide the design and assessment of visualizations, which can be useful in multimodal delivery of education.

Narrative to Data-Driven Continuum for Visualizations

Narrative visualization is a category that leverages visual metaphors or stories. Examples include illustrations, animations, storyboards, and graphic novels (Fry et al., 2013). Alternatively, data visualizations, as the name implies, rely heavily on information and data. Software visualizations are domain specific and help communicate graphically how programs or algorithms are intended to function (Olsson et al., 2015). Typically, these are used by information technology professionals, but as our society grows more tech-savvy, these types of visualizations may be useful for explaining financial technology functions to users. Visualizations can exist along a continuum between "data-based and narrative-based visualizations" (Fry et al., 2013, p. 1233). For example, animations can be used not solely as a narrative device but also to illustrate relationships between concepts, particularly in science (Gilbert et al., 2008).

Using visualization as an assignment, educators can assess students' understanding of how to communicate domain-specific concepts (e.g., personal finance) with the use of visual metaphors. A prototype of the infoEmotion© matrix developed by Fry and colleagues (2013), provides a framework for assessing narrative visualizations for financial education. The content elements featured in the matrix include financial data, financial information, financial concept, behavioral consequence, behavioral decision process, behavioral negotiation, behavioral ethic, behavioral culture, and behavioral emotion. This tool was used to identify which elements were present in 3.5 minute clips on financial decision-making submitted by students in the "Design 4: Visualizing Finance" course at Parsons (Fry et al., 2013).

Data Visualizations in Understanding Trends

Data and evolution of technology in general, focus on data visualizations has increased. Data visualizations can include elements of visual metaphors but leverage data to be produced, as seen in Figure 4, where a graph by Nigel Holms was created whose teeth noted bars of a graph illustrating costs of campaign expenditures in the millions by year from 1972-1982 (Healy, 2019, p. 8). These visualizations are used to communicate trends in large datasets that would be difficult or impossible to recognize without synthesizing the information graphically. Some examples include graphs, charts, tables, maps, infographics, and dashboards. These types of visualizations can be challenging to design as well as interpret. And best practices or common design methodologies can differ across domains.

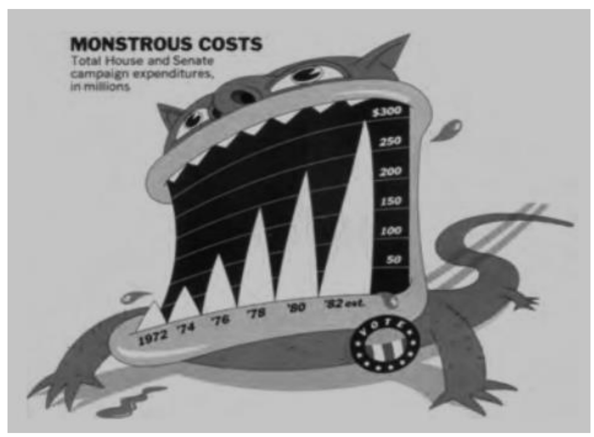

Figure 4. "Monstrous Costs" by Nigel Holms (1982) as cited in *Data visualization: a practical introduction* by K. Healy, 2019, Princeton University Press, p. 8.

Limitations of Research on Visualizations' Impact

Compounding the difficulty in categorizing visualizations is the challenge of assessing their impact on facilitating understanding. Part of the challenge in assessing the impact and utility of visualizations in education lies in the variance of specific design features, how visual stimuli are perceived (e.g., color), and working memory limitations for individual learners. A critique of empirical studies and theories around the use of visualizations has also outlined the limitations of visual aids like graphs and diagrams compared to narrative text since they often lack details and nuance needed for deep understanding (Carifio & Perla, 2009). Additionally, Carifio & Perla (2009) point out that many studies did not acknowledge differences of their participants with respect to cognitive development, mental imaging or visualizing abilities, and formal (propositional) or concrete and transitional reasoners. Despite these limitations, there are still many benefits visualizations alongside narrative descriptions – either textual or auditory – can provide for learning. Additionally, it's critical to acknowledge our society's growing need to appraise significant amounts of information quickly and efficiently to understand trends or relationships. And the most obvious way to address this need is through data visualizations.

Research on visualizations has focused on specific design features, including the perception or usability of them (Bartram et al., 2011; Gramazio et al., 2017; Jahanian et al., 2017), or their roles in mediating some outcome variable, like interest (Magner et al., 2014), knowledge gain (Fry et al., 2013; Ilves et al., 2018; Kothakota & Kiss, 2020), or behavior (Godehardt, 2009; Jin, 2017). Some theoretically and empirically-informed guidance for design considerations highlights the unique needs of individuals interpreting or using visualizations (Chandler, 2004; Cook, 2006; Mayer, 2001; Moreno & Mayer, 2007, 1999). Alternatively, the Visual Display of Quantitative Information (Tufte, 2001) has been influential for data visualization design but much of the guidance is not empirically informed so it should not be leveraged in a vacuum to inform design decisions.

Color in Visualizations

Color, a common feature of many visualizations, provides an interesting design consideration solely because of the array of ways colors are perceived. For example, regardless of plot type, the transparency boundaries of a grid for usability varies depending on the color of the grid. Red and black grids perform similarly to each other but blue needs darker lines to be usable in layered visualizations, like geospatial maps (Bartram et al., 2011). Additionally, the tools available for generating color palettes can vary in their ability to create discriminable palettes of different sizes (e.g., 3-, 5-, or 8-color combinations) based on user preferences (Gramazio et al., 2017).

Beyond user preferences for the design of visualizations, it's important to acknowledge the accessibility challenges of using color within visualizations. Everyone perceives color differently and there can be multiple affective associations with a single color depending on the context of when it is used (Jahanian et al., 2017). Additionally, there are many different types of color blindness or color vision deficiency which can impact whether certain features of a visualization are even discernable to some learners.

Intention of Message When Designing Visualizations

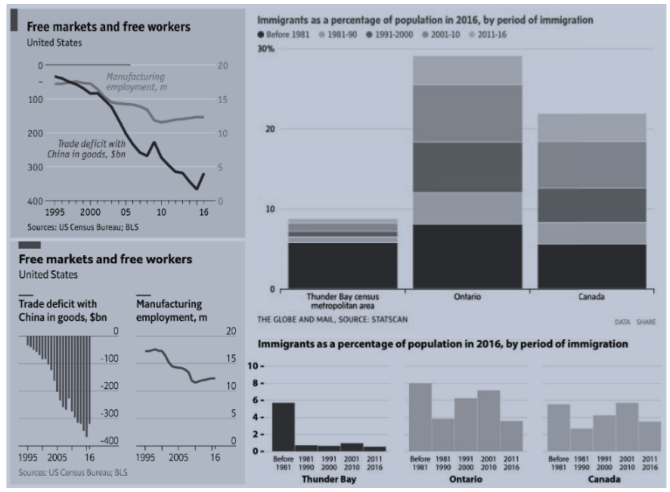

Figure 4. The Markets (left) and Immigration (right) charts used in our experiment. The original versions are on top. Note. From "How to evaluate data visualizations across different levels of understanding," by A. Burns, C. Xiong, S. Franconeri, A. Caro, & N. Mahyar, 2020, IEEE Workshop on Evaluation and Beyond – Methodological Approaches to Visualizations (BELIV), p. 22.

The intention of the message behind a visualization is also critical in its initial design and potential interpretation. In a study by Burns & colleagues (2020), Bloom's Taxonomy was used to guide assessment of levels of understanding from visualizations in 3 different domains: immigration, economic markets, and COVID cases. Three visualizations, initially identified as "poorly designed", were redesigned by experts to better illustrate the originally intended message (example provided in Figure 4), and both the original and redesigned visualizations were used in the study. For each set of visualizations, six questions were created to assess varying levels of understanding – knowledge, comprehension, application, analysis, synthesis, and evaluation. Findings illustrated "… it is important to evaluate visualizations at the Knowledge, Application, and Analysis level to test whether the reader has correctly interpreted the visualization at a grammatical level" (p. 26), however design choices deemed as "better" or "worse" may not have an effect on interpretation of visualizations for assessment of varying levels of understanding (Burns et al., 2020).

Visualizations to Improve Efficiency in Online Environments

Visualizations may help learners or workers complete tasks and improve efficiency, which is important for navigating many learning environments, particularly online. Dashboards with visualizations of contextual information embedded into a digital workspace were found to improve efficiency and effectiveness of knowledge workers trying to find a person for a given job or to delegate tasks (Godehardt, 2009). This alludes to the role of visualizations in user interface design in helping reduce the cognitive load of navigating a virtual learning environment. Results of a study by Sumner and colleagues (2005) showed that users of the DLESE system with embedded visualizations used the visualizations as a tool rather than a learning device and used benchmarks identified in the search engine interface to guide their decision-making, which improved their efficiency in completing tasks and finding learning materials compared to the control group that did not have embedded visualizations. Additionally, the more familiar a user or learner is with a stimuli (website content, interface design, etc.), the quicker they are to appraise it (Jokinen et al., 2018). Therefore, designing visualizations and organizing them in a way that is more familiar to the learner can aid in improving ease of use and reducing hurdles that could inhibit self-regulated learning.

How content is framed or "cued" impacts what the user focuses visual attention on which can change associations with it depending on previous exposure to that content (Jokinen et al., 2018). With digital environments for learning, both designers & educators typically have specific goals. If leveraging commercial digital environments, like social media, for learning, it's important to consider prior experience of the intended learners within that environment and their motivations for visiting. Therefore, educational experiences and complementing visualizations can be designed to align with the user's experience expectations and goals. For example, many personal finance-oriented awareness campaigns targeting college students leverage social media. If practitioners are designing educational outreach campaigns that leverage several different social media platforms, it may be necessary to modify the format or structure of the content – both text and visuals - to what a learner is most likely to expect on each individual platform.

Table 3. *Overview of Instructional Design Considerations and Rationale for Use.*

Instructional Design Consideration	Rationale
Multiple representations using the visual modality or visual/verbal modalities should be explicitly linked in time and space	Reduces cognitive load required to integrate multiple sources of information
Dual-mode presentations are typically advantageous over single-mode presentations	Increases the capacity of working memory
Present verbal information through narration rather than written text	Eliminates competition for visual attention
Animations have tremendous potential when representing dynamic phenomena, but in many cases the benefits of animation are not realized	Animations are often complex and fast paced, requiring more cognitive resources for processing
Highly interactive elements should be presented in isolation for novice learners	Reduces working memory load, eliminating the need for simultaneous processing of the elements
Instructional guidance can help learners actively construct an understanding of the concepts	Minimizes the cognitive load required to construct schemas
Redundant information should be avoided	Avoids using cognitive resources for processing information multiple times, especially for learners with more prior knowledge

Note. From "Visual representations in science education: The influence of prior knowledge and cognitive load theory on instructional design principles," by M.P. Cook, 2006, *Science Education, 90*(6)p. 1086.

Design Considerations

To address the cognitive aspects of using visualizations to support learning, Cook (2006, p. 1086) highlights a list of instructional design considerations (See Table 3) when selecting visualizations for science education that can be useful across multiple domains. Much of this guidance pulls from the Cognitive Theory of Multimedia Learning (Mayer, 2001) which emphasizes three primary assumptions about how the brain processes information. The ***dual-channel assumption*** describes humans' ability to process visual and auditory information simultaneously. However, the ***limited capacity assumption*** explains that our capacity to retain information in working memory within each channel is rather small: limited to five to seven chunks of information. And, finally, the ***active processing assumption*** highlights how humans organize incoming information into mental models that can be incorporated with other, prior knowledge.

Multi-modal delivery continues to need careful consideration when implementing visualizations. Two types of software visualizations, iteration prototype and object orientation prototype visualizations (see Figures 5 and 6), were used in a study with programming students (Olsson et al., 2015). The iteration visualization prototype was

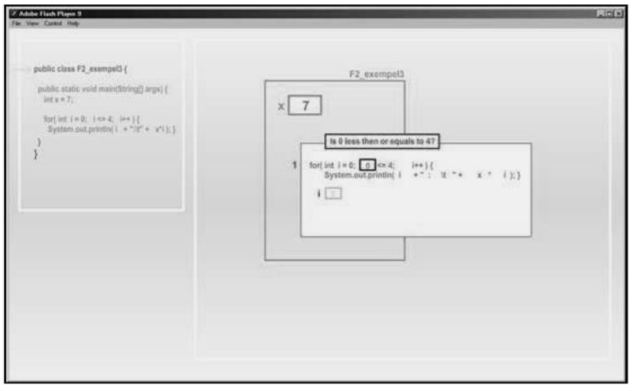

Figure 5. A snapshot of the iteration visualisation prototype at the beginning of its process. Note. From "Visualisation and gamification of e-learning and programming education," by Olsson, P. Mozelius, & J. Collin, 2015, Electronic Journal of E-Learning, 13(6), p. 449.

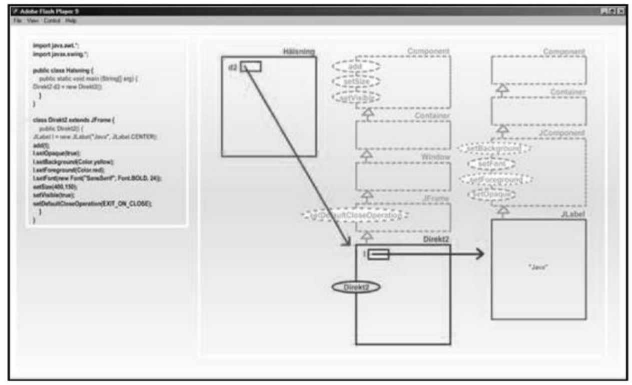

Figure 6. A snapshot of the object visualisation prototype at the middle of its process. Note. From "Visualisation and gamification of e-learning and programming education," by M. Olsson, P. Mozelius, & J. Collin, 2015, Electronic Journal of E-Learning, 13(6), p. 449.

helpful to learning about "loops" and easy for students to focus on. However, the object orientation visualization prototype was not clear to learners, and they had difficulty focusing on the many concepts addressed within the visualization. Animations can be helpful in some cases, but confusing if there are too many concepts to pay attention to (or the learners lack relevant prior knowledge). Scaffolding content and educational material is important for making visualizations useful to the most learners.

Learning Styles Myth

The myth of learning styles or preferences has persisted despite evidence against its efficacy in supporting learning (Kirschner, 2017; Newton & Miah, 2017; Newton & Salvi, 2020). Leveraging multimodal delivery, rather than using learning styles to guide curriculum design, can help increase understanding and improve knowledge

assessment scores. In a recent study by Kothakota & Kiss (2020), dual-mode delivery of text explanation plus relevant visualizations helped learners perform better compared to text-only explanations or control (no explanations, only visualizations) on 5 validated financial knowledge assessment questions which were first introduced by Lusardi & Mitchell (*The Big Three and Big Five*, n.d.). Although preferences are important to keep in mind for the design of informal personal finance education, the most learners will benefit from multimodal delivery where choice helps keep learners engaged longer.

Personalized Visualizations

Visualizations created with information relevant to an individual user or learner personalize the context in which the visuals are perceived. The growing field of Personal Informatics (PI) tends to use tools to help with the process of collecting and visualizing personally meaningful data, particularly as it relates to overall health and wellness. However, prior evaluations of the impact of these Personal Informatics-based systems on users found that visualizations from personal data may provide awareness for personal behaviors that may be problematic or help users maintain new behaviors, but they may also induce anxiety for some users (Kersten-van Dijk et al., 2017).

Systems that leverage personalized visualizations should look for ways to highlight users' self-efficacy, which is important for behavior change to occur which has relevance in both self-regulated learning and financial well-being.

Learner Differences When Leveraging Visualizations

Individual differences, both from the perspectives of *personality* or *preferences* and *prior knowledge* are important to consider when leveraging visualizations. However, it's important not to "pigeon-hole" learners into a singular category like a particular learning style (Kirschner, 2017, p. 167) since humans are dynamic and complex creatures. Preferences and prior knowledge can change over time while personality traits generally remain consistent. Adapting to the fluid aspects of each individual can be challenging, particularly with fewer resources and increased demand for many educators and practitioners. This is where choice may be valuable in whether visualizations are available to learners or the type of visualizations that are used to supplement narrative content. As discussed earlier, choice can delay the decline of situational interest (Fastrich & Murayama, 2020).

Goal Orientations of Learners

Goal orientations of learners, in particular, has been studied in connection with the usefulness of personalized visualizations in online environments (Auvinen et al., 2015; Ilves et al., 2018). Heat maps and line charts depicting a learner's behavior in an online course compared to their peers improved grades compared to a control group that was not provided any visualizations (Auvinen et al., 2015). In this study, high-performers who were provided visualizations submitted work earlier than those that did not have any visualizations about their performance but there was little difference for low-performers. High-performers interacted most with both badges (icons depicting completion of a task or milestone) and the personalized visualizations (heat maps & line charts). Students with mastery extrinsic and performance-approach goal orientations seemed more interested in digital badges (Auvinen et al., 2015). Badges were found to be more interesting in another course where formal grades were absent and may support positive feelings for some learners (Olsson et al., 2015) in informal learning scenarios. Performance avoidance goal orientations exhibited behaviors more closely correlated to heatmaps (Auvinen et al., 2015).

Textual visualizations (with progress bars, see Figure 7) or graphical (radar chart, see Figure 8) visualization to show starting, scheduling, earliness, and exercise points in an online course were also studied alongside goal-orientation (Ilves et al., 2018). Both performance approach and mastery-oriented students completed more exercises in the radar visualization group where comparison of one's behaviors with others was available. Performance approach-oriented students performed better with no visualization compared to the those with the text visualization that had progress bars (Ilves et al., 2018).

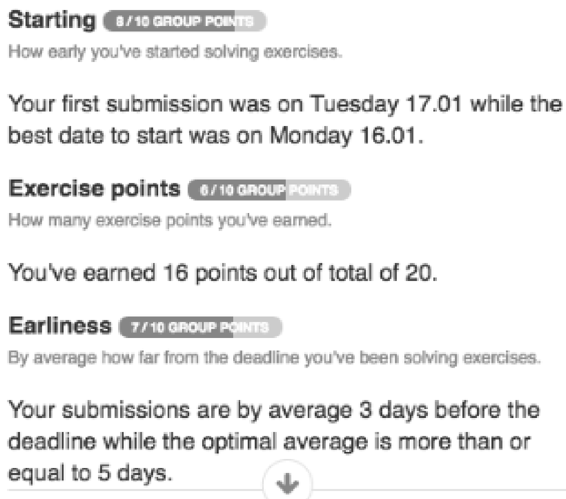

Figure 7. Textual visualization of a problem set. Note. From "Supporting self-regulated learning with visualizations in online environments," by K. Ilves, J. Leinonen, & A. Hellas, 2018, Proceedings of the 49th ACM Technical Symposium on Computer Science Education, p. 259.

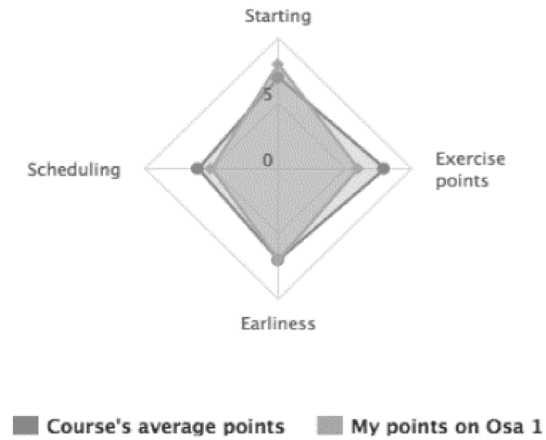

Figure 8. Radar visualization of a problem set. Note. From "Supporting self-regulated learning with visualizations in online environments," by K. Ilves, J. Leinonen, & A. Hellas, 2018, Proceedings of the 49th ACM Technical Symposium on Computer Science Education, p. 260.

Results of empirical studies on the relationship between personalized visualizations and performance seem mixed. For example, in the Auvinen et al. study (2015), visualizations on learner performance were found to be beneficial for engagement of high achieving learners but may not provide any benefit to lower achieving students. However, the study by Ilves et al. (2018) showed how personalized visualizations may help low performing students and harm approach-oriented students depending on what the visualizations are depicted. Low performing students may see the most benefit from visualizations of behavior, while visualizations without comparison elements may harm performance approach-oriented students.

Motivation Support Through Visualizations

Despite the mixed results of studies on goal orientations and visualizations, other studies have found visualizations may increase motivation for students, a key variable for engagement and self-regulated learning. For example, visualizations that allow a student to compare their behavior to others has been found to be more effective. A study by Olsson and colleagues (2015) found that progress bars were appreciated by students and seemed to help

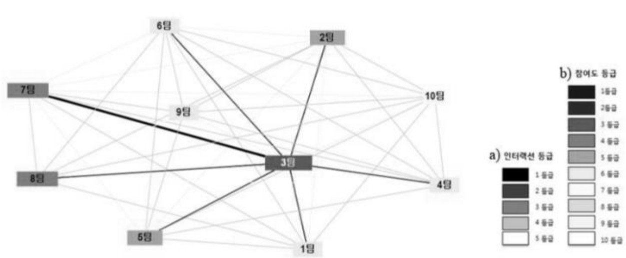

Figure 9. A-type visualization of group participation and interaction. Note. From "Using visualization to motivate student participation in collaborative online learning environments," by S.H. Jin, 2017, Educational Technology & Society, 20(3), p. 54.

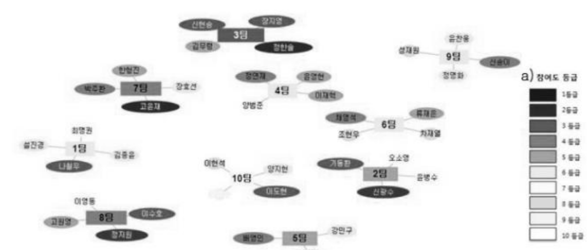

Figure 10. B-type visualization of group or individual participation levels. Note. From "Using visualization to motivate student participation in collaborative online learning environments," by S.H. Jin, 2017, Educational Technology & Society, 20(3), p. 55

facilitate students' "self-control" but were also not used by all students. Concept maps depicting either group participation and interaction ("A-type visualizations", see Figure 9) or group participation and individual participation ("B-type visualizations", see Figure 10) increased behaviors associated with better performance and collaboration when compared to groups that did not receive any visualizations (Jin, 2017). B-type visualizations had significant effects on individual participation, peer interactions, login-frequency, number of follow-up posts, and message lengths compared to A-type and control groups (Jin, 2017).

Discussion & Implications in Financial Education

There are both benefits and limitations of using visualizations in education. Visualizations can support or hinder engagement, interest development, and self-regulated learning depending on the type of information being visualized and the characteristics of learners. For example, decorative illustrations may trigger situational interest for learners with both low and high levels of knowledge, but the additional cognitive load required of novices to process those illustrations may inhibit learning and derail any potential development of maintained situational interest (Magner et al., 2014). In this case, using decorative illustrations to market financial education programming or services may be initially helpful for gaining attention and triggering interest, but they should be used sparingly and intentionally when facilitating education.

Leveraging visualizations as feedback to learners can encourage engagement and self-regulated learning of financial concepts. With the lifelong learning needs that accompany independent personal finance decisions, using visualizations to provide feedback on knowledge gain, progress through an online course, or healthy consumer behaviors may help learners continue to engage in financial education and even reinforce transfer of knowledge to behaviors. However, it is important to remember that increased knowledge gain does not necessarily lead to increased interest in a financial topic.

Visualizations can be used to reduce cognitive load in understanding complex financial decisions. This can be helpful not just in financial education efforts, but also in regulation for consumer transparency in financial transactions, or in applications for other complex life decisions (e.g., healthcare). However, it's important to structure the visualizations to match the prior knowledge of learners. For consumers with less relevant financial knowledge, complex visualizations may result in cognitive overload which can lead to disengagement.

Visualizations can be used in financial education to market programs and services (triggering interest), illustrate concepts or relationships (nurturing knowledge gain), guide attention, encourage engagement with topics, and provide feedback that supports self-regulated learning. However, more research is needed to identify how visualizations can be leveraged to match the needs of individual learners. Future research should consider assessing the unique aspects of learners participating in studies, not just from a performance or goal-orientation perspective, but also participants' capacity for visualizing information or their reasoning abilities.

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Gambling Behavior and Cryptocurrency Investment: A Treatment-Effect Analysis

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Abstract

This study investigates the relationship between gambling behavior (as measured by lottery ticket use) and cryptocurrency investment. Data from the 2018 National Financial Capability Study were used to examine cryptocurrency investments among 1,450 investor-respondents. In addition to logistic regression, treatment-effect estimation techniques—propensity score matching (PSM), augmented inverse-probability weighting (AIPW), and inverse-probability weighted regression adjustment (IPWRA)—are used to demonstrate a positive and significant relationship between gambling behavior and cryptocurrency investment. This study provides important insights for investors, financial advisors, policymakers, and regulators as the cryptocurrency milieu continues to evolve.

Keywords: cryptocurrency, financial planning, gambling, household finance, investments, treatment effects

Introduction

Gambling is common in the United States (e.g., Welte et al., 2002); over 80% of American adults report gambling sometime during their lives (National Research Council, 1999). There is a long vintage of gambling in the United States; it was the proceeds from lotteries that helped fund explorations to the New World (National Research Council, 1999). In the 20th century, there has been a marked increase in legal gambling in the United States (Welte et al., 2002). The advent of the Internet has proliferated these opportunities even more (Welte et al., 2002).

Cryptocurrency is popular (Saiedi et al., 2020). Its global market cap is at least a trillion dollars (Johnson et al., 2023). Cryptocurrency is is another way in which technology has upended the financial landscape (Tharp et al., 2021). The rising prominence of cryptocurrency necessitates research on its impact and place in personal finances and portfolios. These issues are salient for financial advisors because new applications and technology make cryptocurrency easier to invest in for consumers. Despite the rise of cryptocurrency, to some it may be seen as speculative and akin to financial-market gambling because of its volatility and the lack of government or central-bank backing.

Financial markets are not foreign to gambling behavior. Research has indicated that those who day-trade were more likely to engage in gambling behavior (Arthur & Delfabbro, 2017), and that those who engage in high-risk stock trading are more likely to engage in gambling (Arthur et al., 2015). Cryptocurrency trading shares many of the same types of risks as speculative share-trading and trading in high-risk stocks (Delfabbro et al., 2021; Mills & Nower, 2019).

Cryptocurrency trading behavior has been summarized as consisting of making decisions on limited information, focusing on short-term gains, buying and selling at the wrong times, and often losing money (Delfabbro et al., 2021). This behavior is like gambling behavior because it is impulsive, short-term focused, and risky (Delfabbro et al., 2021). Recent literature has noted that regular gamblers report cryptocurrency trading (Mills & Nower, 2019).

This study advances the literature by exploring the association of gambling behavior and cryptocurrency investment. Studying this relationship is important for financial-planning policy makers and practitioners because gambling problems and their maladies are important social issues due to the negative consequences associated with problematic gambling behavior (Flack & Morris, 2017). Researchers have only begun to examine the relationships between cryptocurrency and gambling (Steinmetz, 2023). If a relationship indeed exists between speculative cryptocurrency behavior and gambling, financial planners may play a frontline role in identifying and ameliorating this behavior.

This study advances the literature on several fronts. It focuses on gambling behavior and cryptocurrency in the United States, as some of the past literature (e.g., Delfabbro et al., 2021; Steinmetz, 2023) use international or foreign data. This study controls for various dimensions not yet examined in the previous literature, such as objective and subjective investment knowledge, as well as risk tolerance, which may bear on the use of cryptocurrency. We also advance the literature methodologically by using propensity score analysis and treatment-effect techniques that allow for the estimation of treatment effects with observational data (Guo & Fraser, 2015).

Literature Review and Hypotheses

Cryptocurrency is an encrypted, peer-to-peer system that allows for digital barter (DeVries, 2016). The original and most well-known is Bitcoin, and the many other cryptocurrency brands are referred to as altcoins (Lee et al., 2018). Cryptocurrency uses blockchain technology, which is a decentralized open-ledger technology (Gainsbury & Blaszczynski, 2017). It represents cutting-edge innovation with the potential to disrupt global markets (DeVries, 2016) because it presents a price-efficient and scalable solution to two common institutional problems: double-spending and dependence on a trusted third party (Lee et al., 2018).

Cryptocurrency and Personal Finances

Cryptocurrencies are considered an alternative investment (Lee et al., 2018), and they are subject to notoriously high price volatility (Aloosh & Ouzan, 2020). Cryptocurrency has been framed as an investment asset class (Gupta et al., 2020; Polasik et al., 2015); but the active trading of cryptocurrency investments is seen as speculative day trading, akin to gambling (Roza et al., 2023). Researchers have suggested cryptocurrency investing may be a form of excitement-seeking (Pelster et al., 2019), and it is associated with sports betting, daily fantasy sports, high-risk stock trading, and problem gambling (Mills & Nower, 2019).

Cryptocurrency and Speculative Investing

The typical investor is risk averse (Kahneman & Tversky, 1979), whereas a gambler is characterized by irrationally extreme risk-seeking behavior (Newall & Weiss-Cohen, 2022). Thus, a distinction must be made between typical investing behavior, which is long-term in nature and a part of a healthy financial plan, and the speculative investing behavior, in which high-frequency stock trading exhibits a gambling experience (Newall & Cohen, 2022). This extreme risk seeking behavior is seen in both speculative investing and gambling (Arthur et al., 2016; Lee et al., 2023) because both can be highly addictive and appeal to individuals with risk-seeking tendencies (Weidner, 2022). Although only a small percentage of stock market investors show symptoms of compulsive gambling problems, those who do tend to have an active and speculative trading style (Cox et al., 2020).

Recent research highlights the similarities between traditional stock market trading, gambling, and cryptocurrency trading (e.g., Oksanen, 2022; Senarathne, 2021). Oksanen et al. (2022) explained that not all stock market traders are similar to gamblers and cryptocurrency traders, but rather the similarities are limited to those who demonstrate excessive behavior within online trading platforms. One German study found that the average cryptocurrency investors trade their cryptocurrency investments more often compared to their non-crypto-investor counterparts (Lammer et al., 2019), which explains why some refer to it as a “cryptocurrency trading addiction” (Griffiths, 2018, p.11). Griffiths (2018) notes that crypto-trading addiction is a subtype of online day-trading addiction.

Gambling Behavior

Gambling is common in the United States, with an overwhelming majority of American adults reporting some gambling behavior in their lifetime (e.g., Welte et al., 2002). Gambling runs the gamut of games and experiences; for example, casinos can have traditional card and table games, but they can also have sports and off-track betting (Welte et al., 2002). The Internet, moreover, has turned the computer into a “gambling machine” (Welte et al., 2002, p. 314).

The first major national gambling survey was conducted in the 1970s, and it found that the majority of Americans gambled at least annually (Kallick et al., 1976; Welte et al., 2002). It also found that 24% of respondents played the lottery. It found that males were more likely to have gambled in the past year, and that there were differences in gambling behavior between racial groups (Kallick et al., 1976; Welte et al., 2002). There were also socio-economic differences, with gambling behavior rising with income levels (Kallick et al., 1976; Welte et al., 2002).

Welte et al. (2002) performed a national gambling survey that sampled respondents between 1999 and 2000. This survey found that the lottery was the most popular form of gambling, with 66% of respondents having reported playing the lottery in the past year; although lottery play did not involve large amounts, those who played the lottery did so on average 34 times in the past year (Welte et al., 2002). They also found that, although men and women were about equally likely to have gambled in the past year, men were more likely to gamble at least weekly; men tend to bet more frequently and to bet with higher dollar amounts (Welte et al., 2002). Additionally, they found racial group differences, with African Americans being less likely to have gambled compared to Whites (Welte et al., 2002). The proportion of the sample that gambled weekly was higher for those with lower socioeconomic status, which was measured by a function of family income, education, and occupational prestige (Welte et al., 2002).

Lotteries have been a part of the human experience since antiquity (Ariyabuddhiphongs, 2011). Lotteries are considered by some to be a culturally accepted gambling practice (Binde, 2005). Lotteries are extremely popular, with most states having state-sponsored lotteries (Wisman, 2006). In 2003, for example, total lottery spending was almost $45 billion; in per capita terms, this exceeds that of movie attendance (Wisman, 2006).

Past literature has noted that lottery revenues are disproportionately represented by those with lower incomes, less formal education, and racial minorities (Herring & Bledsoe, 1994). Past literature has also showed a relationship between education and gambling behavior; a United Kingdom study found that the frequency of lottery play was negatively associated with education level (Rogers & Webley, 2001). Past literature has also indicated that the “working class sector” may be overrepresented compared to the middle class in lottery sales (Griffiths & Wood, 2001).

Various theories have been advanced to explain lottery gambling, such as those relating to judgment under uncertainty (e.g., Tversky & Kahneman, 1974, 1981), to gambling-specific theories, such as the cognitive theory of gambling (Griffiths & Wood, 2001). Drawing from a judgment under uncertainty framework, lottery behavior can be explained using various heuristics and cognitive biases. Theories rooted in cognitive factors have also been examined concerning gambling and lottery behavior. At bottom, these cognitive theories assume that the “core beliefs” of the regular gambler are flawed (Rogers, 1998). These core beliefs relate to the profitability of gambling, that the gambler is equipped to win in the long-run, and that persistence will pay off (Rogers, 1998; Walker, 1992).

Cryptocurrency Trading and Gambling

Some researchers have noted that active cryptocurrency trading has emerged as a substitute for gambling (e.g., Delfabbro et al., 2021; Griffith 2018; Guzmán et al., 2021; Roza et al., 2023; Steinmetz, 2023). Betting on cryptocurrencies is akin to playing the lottery (Conlon & McGee, 2020; Dorn et al., 2015). The positive relationship between cryptocurrency trading and gambling is thought to be caused by the cryptocurrency market being open all day every day and its exaggerated price volatility with “lottery-like features” (Guzmán et al., 2021, p. 2), which creates an environment like gambling (Johnson et al., 2023) and entices speculative investment (Antonakakis et al., 2019). The alluring asymmetrical results of the long-shot entices some to bet on low-probability results (Newall & Weiss-Cohen, 2022).

Gambling and active cryptocurrency trading behavior are both motivated with limited information and the expectation of an unknown high future payoff (Delfabbro et al., 2021) where the outcome is largely influenced by chance (Delfabbro et al., 2019). Delfabbro et al. (2021) identified various psychological factors that may sway investors to actively trade cryptocurrencies, such as the illusion of control, fear of missing out (FOMO), and the temptation to become highly absorbed in monitoring price movement.

Existing research supports the association between cryptocurrency trading and gambling. Mills and Nower (2019) found that over half (53%) of regular gamblers also actively traded cryptocurrencies. Another study found a positive relationship between problem gambling and cryptocurrency trading (Johnson et al., 2023). The meme-wagering aspect of cryptocurrency investing gives further credence to the association between gambling and cryptocurrency trading, such as the hyper-speculation around Dogecoin in early 2021 (Philander, 2023). Mills and Nower (2019) found that high-risk stock trading is positively associated with cryptocurrency trading.

Socio-economic trends can be spotted in the cryptocurrency trading research. Men are more likely to speculatively trade cryptocurrency (Hasso et al., 2019; Lammer et al., 2019; Oksanen et al., 2022; Steinmetz, 2023), and realize lower returns compared to their female counterparts (Hasso et al., 2019). One German sample found the average cryptocurrency user to be male, highly educated, and married or in a partnership (Steinmetz, 2023). Oksanen et al. (2022) found that active cryptocurrency traders were more likely to have an immigrant background, have taken short-term loans, and possess higher levels of stress and loneliness compared to their non-crypto investor counterparts. Past literature notes that education and income is associated with cryptocurrency ownership (Steinmetz, 2023).

Cryptocurrency traders may also differ from gamblers in various ways. Steinmetz et al. (2021) found that cryptocurrency traders are more mentally engaged and susceptible to the dogmatic ideology in the cryptocurrency eco-system, compared to non-cryptocurrency traders. A German study found that cryptocurrency traders who also gamble have even higher levels of ideology, trust, and financial investment than non-gambling cryptocurrency traders (Steinmetz, 2023), which suggests that cryptocurrency trading is a further extreme on the gambling spectrum.

In line with existing research, the current study also positions active cryptocurrency trading as a form of gambling. Based on the literature surrounding gambling behavior, speculative financial behavior, and cryptocurrency, we examined several hypotheses, which correspond to the demographic factors, socio-economic status, financial and investment knowledge, and gambling behavior. The primary hypothesis, which serves as the foundation for our adoption of the treatment effect models, is Hypothesis 6, which pertains to gambling behavior.

Hypothesis 1: Cryptocurrency investment will be positively associated with being male.

Hypothesis 2: Cryptocurrency investment will be positively associated with income level.

Hypothesis 3: Cryptocurrency investment will be positively associated with objective financial knowledge.

Hypothesis 4: Cryptocurrency investment will be positively associated with subjective investment knowledge.

Hypothesis 5: Cryptocurrency investment will be positively associated with objective investment knowledge.

Hypothesis 6: Cryptocurrency investment will be positively associated with gambling behavior.

Methods

Data

This study used data from the 2018 National Financial Capability Study (NFCS) State-by-State Survey combined with the 2018 Investor Survey (FINRA Investor Education Foundation, 2019). The NFCS is a project of the FINRA Investor Education Foundation. The sample of the State-by-State Survey consisted of 27,091 adults across the United States. The 2018 Investor Survey consisted of 2,003 adults who completed the 2018 State-by-State Survey and indicated that they had investments in non-retirement accounts and were the primary (or shared) decision-maker regarding investments (FINRA Investor Education Foundation, 2019). After listwise deletion of our covariates, our final analytical sample had 1,450 investor-respondents.

Dependent Variables: Cryptocurrency Investment

The main dependent variable here is cryptocurrency investment; we operationalized this with a binary variable that is coded equal to 1 if the respondent answered affirmatively to whether he or she has ever “invested in cryptocurrencies, either directly or through a fund that invests in crypto currencies?” “Don’t know” responses were coded as negative responses; “prefer not to say” responses were excluded.

Focal Independent Variable: Gambling Behavior

Treatment effect approaches use two models—the treatment model and the selection model. For the treatment model, the dependent variable is the cryptocurrency-investment variable noted above. Given the selection issues around gambling behavior, however, we separately modeled gambling behavior (the selection model); the selection model estimates those who engage in the gambling behavior. To model gambling behavior, we used a question concerning lottery tickets as a proxy for gambling.

The State-by-State survey asks respondents, "[o]ver the past 12 months, approximately how often did you buy a lottery ticket?" with categorical response options. We created a binary variable with those indicating buying a lottery ticket about once a week or more frequently treated as affirmative responses and all other responses treated as negative responses. This frequency was chosen to demarcate those who regularly engage in lottery ticket buying behavior as opposed to those who only infrequently purchase a lottery ticket.

Independent variables

Demographic variables. Standard demographic variables were included. We also control for education status. Although the NFCS does not have net worth data, we proxy for financial status by including investment asset balance size in non-retirement assets (Todd & Seay, 2021). This was treated as a categorical variable, with three levels for parsimony; "don't know" and "prefer not to say" responses were excluded. We controlled for employment status by using a binary variable coded as 1 if the respondent worked full time for an employer.

Financial attributes and related characteristics. Several financial- or investment-related attributes or characteristic variables were included. Because cryptocurrency use was being modeled as an investment decision, subjective investment knowledge was included on a scale of 1 to 7, with higher values indicating higher subjective knowledge; "don't know" or "prefer not to say" responses were excluded. Objective investment knowledge was created as an index (with a range of 0–9) of correct responses to nine investment knowledge questions on various topics such as the difference between equity and bond investments, liquidation preferences, risk-return tradeoff, best-returning asset classes, index funds, municipal bonds, margin investing, and short-selling. Objective financial knowledge index was created as an index (with a range of 0–6) of correct responses to six financial knowledge questions on various topics such as compound interest, inflation, bond pricing, the rule of 72, mortgages, and diversification.

Because gambling behaviors may be a function of scarcity (due to the lower income), among other things, we included a financial scarcity control with a binary variable coded as 1 if the respondent indicated that it was somewhat or very difficult to typically cover expenses and pay bills in a month. Related to scarcity, we also included a binary indicator variable if the respondent received Medicaid, food stamps, or SNAP benefits. We included a binary variable coded as 1 if the respondents indicated feeling that their finances often or always seem to control their lives.

Because investing in cryptocurrency may be related to technology competency (i.e., the ability to understand cryptocurrency or the specialized platforms required to trade it), we included a technology proxy variable coded as 1 if the respondent indicated having bought or sold investments online through a website. Playing the lottery is a choice that involves risk. Financial risk tolerance was included in the model and was measured on a 10-point Likert-type scale with the survey question, “When thinking of your financial investments, how willing are you to take risks?” We controlled for financial self-efficacy through a survey question on perceived control over personal finances with a variable coded to 1 if respondents answered “often” or “always” in response to the question about finances controlling their lives.

Statistical Analyses

We first examined descriptive statistics to look at differences between cryptocurrency investors and non-cryptocurrency investors. As a baseline, we estimated a logistic regression to determine the variables associated with reporting a cryptocurrency investor. For the logistic model, average marginal effects (AMEs) were estimated in addition to odds ratios (Todd & Seay, 2021).

We also explored several treatment-effect models. Treatment-effect models help account for variables that can affect both the treatment (here, gambling behavior proxied by lottery ticket use) and the outcome (cryptocurrency investment). Under the potential-outcome model (the Neyman-Rubin counterfactual framework, Guo & Fraser, 2015), the average treatment effect (ATE) is defined as the expectation of the person in the treated state less the same person in the untreated state. However, with observational data, the counterfactual observation (the response value in the unobserved state) for each observation is definitionally missing. In short, we cannot observe the states of nature for each respondent.

We first used propensity score matching (PSM) to estimate the treatment effect of gambling behavior on whether someone is likely to purchase a cryptocurrency. Propensity scores were estimated by logistic regression (to find the predicted probabilities). The ATE was then measured using a logit model to estimate the effect of gambling behavior on whether an individual owns cryptocurrency.

Next, we used augmented inverse-probability weighting (AIPW). AIPW estimates both an outcome model and a treatment model. A benefit to AIPW is that it is known as “doubly robust,” meaning that only one of the models needs to be properly specified for consistent estimation (Glynn & Quinn, 2009; Han, 2012; Seaman & White, 2013). Lastly, we used inverse-probability weighted regression adjustment (IPWRA). This method, too, estimates both an outcome and treatment model, and it is doubly robust, but it applies the weights estimated from the treatment model in the outcome model.

Logit models were estimated for both the outcome and treatment models in both the AIPW and IPWRA estimates. To assess the conditional-independence assumption, balance diagnostics and tests were checked. We used Imai and Ratkovic’s (2014) overidentification test; after adding an age-gender interaction, the null hypothesis of covariate balancing was not rejected. The overlap assumptions were assessed using estimated probability density plots.

Results

Descriptive statistics are reported in Table 1. We report descriptive data for the entire analytical sample and then divided respondents into crypto and non-crypto investing cohorts (See Table 1).

Almost a fifth of the analytical sample reported playing the lottery about once a week or more frequently. Roughly 10% of the investor-respondents in our analytical sample reported having made a cryptocurrency investment. We see that those who reported having cryptocurrency investments tended to be younger than their non-crypto-investor counterparts. A majority were employed full time, but a lesser percentage reported having college degrees. Those with cryptocurrency investments reported higher subjective investing knowledge scores ($p < .01$), but lower objective investing knowledge scores ($p < .01$). Crypto-investors reported lower general objective financial knowledge ($p < .01$). Crypto-investors also reported higher risk tolerances on average ($p < .01$).

Logistic Regression

The results from baseline logistic model are presented in Table 2.

Respondents who played the lottery were associated with having twice the odds and a 4.8 percentage-point increase in likelihood (the average marginal effect) of having invested in cryptocurrency investment compared with those who did not indicate playing the lottery. Age was negatively associated with having made a cryptocurrency investment, with older age ranges linked to lower odds ratios. Using technology was associated with having over four times the odds of having made a cryptocurrency investment.

Propensity score matching

The sample was matched on gender, race, age, employment, education, income, investment assets, cryptocurrency risk, subjective and objective investing knowledge, objective financial knowledge, risk tolerance, and the technology proxy. The matched standardized differences indicated that most had absolute values of under .10 (and all were under .17), and the matched variance ratios were close to 1 with few exceptions. The logistic treatment model after propensity score matching resulted in an average treatment effect (ATE) of 0.048 ($p < .02$), suggesting those exhibiting gambling behavior were 4.8% more likely to invest in cryptocurrency.

AIPW

The AIPW treatment and outcome models are presented in Tables 3 and 4, respectively.

Under the AIPW model, the average treatment effect of gambling (lottery) behavior on cryptocurrency investment was 6.2% ($SE = .031$, $p = .048$); the potential outcome means for those not playing the lottery was .091 ($SE = .009$, $p = .000$), and for those playing the lottery, .153 ($SE = .031$, $p = .000$). Though this effect was larger than the average marginal effect in the logistic regression model, it was directionally the same and roughly equivalent in magnitude.

IPWRA

The IPWRA treatment and outcome models are presented in Tables 5 and 6, respectively.

Under the IPWRA model, the average treatment effect of gambling (lottery) behavior on cryptocurrency investment was 6.0% (*SE* = .024, *p* = .011); the potential outcome means for those not playing the lottery was .091 (*SE* = .009, *p* = .000), and for those playing the lottery .150 (*SE* = .023, *p* = .000).

Discussion

The main purpose of this study was to estimate the relationship between gambling behavior and cryptocurrency investment. Using the logit model, we explored additional hypotheses based on the surrounding literature. Across the baseline logit model and all three treatment model specifications (PSM, AIPW, and IPWRA) there was a positive and significant association between gambling behavior (proxied by lottery-ticket use) and having invested in cryptocurrency. These estimates were roughly equivalent in magnitude, ranging from 4.8 to 6.2 percentage-point increases in likelihood.

Hypothesis 1 posited a gender association between gender and cryptocurrency investment. However, in our logit model, gender was not positively associated with cryptocurrency investment, which does not support Hypothesis 1. Hypothesis 2 posited an association between income and cryptocurrency investment. We did not find general support for this; income level was generally not associated with cryptocurrency investment in our logit model.

Several hypotheses explored relationships between cryptocurrency investment and various types of financial and investment knowledge. Hypothesis 3 posited a positive association between objective financial knowledge and cryptocurrency investment. We did not find support for this association in the logit model. Hypothesis 4 posited a positive association between subjective investment knowledge and cryptocurrency investment; we did find support for this in the logit model. This positive association between subjective investment knowledge and cryptocurrency investment comports with past literature that has found associations between high level of perceived knowledge and cryptocurrency ownership (Steinmetz, 2023). Curiously, though, in our results, there were no associations between the objective measures of knowledge (financial or investing) with cryptocurrency investment. Hypothesis 5 posited a positive association between objective investment knowledge and cryptocurrency investment. We did not find support for this association in the logit model. The only knowledge-based association for cryptocurrency investment was with subjective investment knowledge.

In the logit model, we observed some additional associations. For example, we observed a stable monotonic association between age and cryptocurrency investment, with older investor-respondents being less likely to have reported cryptocurrency investment. One of the larger effect magnitudes was the association between respondents who reported that finances control their lives and cryptocurrency investment; this may be worth exploring in future research. Not surprisingly, cryptocurrency investment was negatively associated with the respondents' perspective on the riskiness of cryptocurrency. There was a positive association between technology use and cryptocurrency investment.

Turning to the central hypothesis (Hypothesis 6), we found that, even after controlling for various factors, there was an association between gambling behavior and cryptocurrency investment. This comports with recent literature that has also started to look at the relationships between gambling and cryptocurrency (Steinmetz, 2023). Unlike some observational studies, though, we attempted to ameliorate selection-effects concern by using several treatment-effect models that account for selection effects. Even across those specifications, a positive and significant association was found between gambling and cryptocurrency investment. These findings were consistent across models and estimation techniques.

These results align with perceptions that cryptocurrency investment is a risky behavior—even perhaps based, at least in part, in speculation. The evidence from this study suggests that individuals with a greater propensity to gamble are drawn to cryptocurrency investments, and this was true even after we controlled for various covariates.

Limitations and Future Research

The data used in this study are observational and cross-sectional. This type of data present selection biases, such as nonresponse bias, and information biases, such as recall bias (e.g., Steinmetz, 2023; Wang & Cheng, 2020). A truly randomized experimental approach would be ideal, but the ethical implications of inducing gambling behavior make such a study unlikely. Our approach of using treatment-effect estimation techniques to triangulate causality on observational data is an ideal approach given these constraints. The selection of our covariates was based on theory, past literature, and intuition for those factors that bear on either gambling behavior or speculative investments. It is possible that the selection or treatment models were not properly specified, and we have not accounted for all confounders.

There is also a timing issue, namely that the gambling behavior may not have temporally coincided with the cryptocurrency investment. Although we tried to proxy gambling behavior with lottery ticket purchase, it may be possible that lottery-ticket behavior is not fully coterminous with gambling behavior generally. Some literature has noted that, due to the prevalence and ubiquity of lotteries, they may not be seen as gambling (Ariyabuddhiphongs, 2011).

A small portion of our analytical sample had cryptocurrency investments, so for the logistic-based techniques, events-per-variable, cell frequencies, and cell sparseness were concerns (van Smeden et al., 2016). To ameliorate that risk, we estimated a logistic model with Firth's penalized likelihood correction as a robustness check (Firth, 1993; Todd & Seay, 2021; van Smeden et al., 2016). In that model, lottery use was still positively and significantly associated with cryptocurrency investment.

This study should be replicated on other observational data sets to confirm the results. Although technology use was employed as a proxy for technological savvy, the high AME in the initial logistic regression suggests technological savvy may have a role to play in cryptocurrency investment and should be investigated. The profile of a cryptocurrency investor may change over time, particularly if the cryptocurrency becomes less volatile and more mainstream. This should be examined longitudinally. In our logit model, we observed a significant association between the belief that finances controlled the respondent's life and cryptocurrency investment; additional research should be done on this relationship.

Implications for Practitioners

As cryptocurrency investing becomes more popular, financial planners need to stay abreast of developments in cryptocurrency. Financial planners have a crucial role to play in making sure cryptocurrency is an appropriate option for clients, particularly as a function of a well-balanced and diversified portfolio that is commensurate with the client's risk tolerance, time frame, and other objectives.

Financial planners may want to carefully observe their clients for gambling tendencies. The presence of cryptocurrency investments may alert financial planners to probe for related gambling behaviors, as gambling can be a drain on household income and cash—along with the potential deleterious effects on psychological and general well-being. Financial planners may need to check for gambling behavior via an instrument or by partnering with a mental health professional if needed. Even if the gambling is not addictive or problematic, there are other matters to explore if there are indications that a client may be engaging in gambling behavior, such as ensuring tax compliance. Many small-dollar gambling transactions may be lower than IRS information-reporting requirements but are still considered taxable income.

This research has implications for financial counselors. Finanical counselors may want to ask if their clients have cryptocurrency investments and to inquire of their numerosity. If a financial counselor learns of numerous cryptocurrency transactions—or of speculative positions—the counselor may want to probe further to learn of the reasons behind the positions.

There are also implications for financial educators. Given the use and adoption of cryptocurrency, financial educators may want to educate about cryptocurrency as an asset class and how it may (or may not) fit within a comprehensive financial plan and portfolio. As part of this discussion, the risks of cryptocrrency should be discussed. Financial educators may want to expressly discuss potential ill-uses of cryptocurrency, which may include using it as a speculative asset class or even as a form of gambling.

Financial educators may want to consider incorporating cryptocurrency programming in financial education programs as early as secondary school in case that population is interested in or actively using cryptocurrency (Blue et al., 2024). Financial education programs may want to consider prompting parents and guardaians to discuss cryptocurrency with their children as they approach adulthood; this is particularly relevant as younger generations acquire knowledge via social media.

Regulators should be aware of the effects of gambling behavior. Although this study was primarily concerned with those effects, it should be noted that younger participants had a significant increase in likelihood of investing in cryptocurrency. Regulators may want to consider the protections that are needed to guard younger populations and other vulnerable groups.

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Table 1. Sample Descriptive Statistics

Variable	Non-Crypto n = 1299 Mean/% (SD)	Crypto n = 151 Mean/% (SD)	Total n =1450 Mean/% (SD)	p-value
Male	60.12	65.56	60.69	.20
Non-White	17.17	38.41	19.38	< .00
Age				
18–24	2.23	15.89	3.66	< .00
25–34	6.31	30.46	8.83	
35–44	10.62	22.52	11.86	
45–54	14.63	11.92	14.34	
55–64	23.86	13.91	22.83	
65+	42.34	5.30	38.48	
Income				
< $15,000	1.31	5.30	1.72	.00
$15,000 < $25,000	3.93	6.62	4.21	
$25,000 < $35,000	5.85	9.27	6.21	
$35,000 < $50,000	10.32	7.95	10.07	
$50,000 < $75,000	22.17	23.18	22.28	
$75,000 < $100,000	19.55	20.53	19.66	
$100,000 < $150,000	22.32	18.54	21.93	
$150,000+	14.55	8.61	13.93	
Investment assets				
< $25,000	20.48	28.48	21.31	< .00
$25,000 < $250,000	40.42	47.68	41.17	
$250,000+	39.11	23.84	37.52	
Full-time employ.	34.41	64.90	37.59	< .00
Bachelor's degree	61.66	52.32	60.69	.03
Technology proxy	53.73	90.07	57.52	< .00
Lottery	14.24	43.71	17.31	< .00
Expense difficulty	19.86	37.09	21.66	< .00

Finances control life	13.39	44.37	16.62	< .00
Govt. benefits	5.23	30.46	7.86	< .00
Sub. investing know.	4.86 (1.24)	5.58 (1.31)	4.93 (1.27)	< .00
Obj. investing know.	5.03 (2.15)	3.93 (2.02)	4.92 (2.16)	< .00
Obj. financial know.	4.43 (1.30)	3.29 (1.61)	4.31 (1.38)	< .00
Risk tolerance	6.07 (2.16)	7.34 (2.08)	6.21 (2.18)	< .00
Crypto. Riskiness	4.34 (0.81)	3.41 (1.21)	4.24 (0.90)	< .00

Note: 2018 NFCS, unweighted

p-values for categorical variables from Pearson's chi-square test

p-values for continuous variables from pooled *t* test

Table 2. Logistic Regression of Cryptocurrency Investment (n = 1,450)

	OR	Std. Err.	p	AME	AME SE
Male	1.348	0.985	.682	0.016	0.014
Non-White	1.076	0.264	.766	0.004	0.015
Age (ref: 18–24)					
25–34	0.440	0.295	.221	−0.097	0.061
35–44	0.262	0.189	.064	−0.159	0.060
45–54	0.103	0.080	.003	−0.198	0.060
55–64	0.144	0.107	.009	−0.197	0.061
65+	0.089	0.072	.003	−0.243	0.061
Male × Age					
25–34	1.110	0.956	.903	–	–
35–44	0.911	0.805	.916	–	–
45–54	1.563	1.481	.637	–	–
55–64	0.997	0.901	.997	–	–
65+	0.378	0.393	.349	–	–
Full time	1.204	0.313	.476	0.011	0.016
Bachelor's degree	0.990	0.243	.967	−0.001	0.015
Income (ref: < $15,000)					

$15,000 < $25,000	1.139	0.854	.862	0.010	0.055
$25,000 < $35,000	0.598	0.432	.476	−0.033	0.049
$35,000 < $50,000	0.507	0.360	.339	−0.042	0.048
$50,000 < $75,000	0.662	0.437	.533	−0.027	0.047
$75,000 < $100,000	0.701	0.480	.604	−0.024	0.048
$100,000 < $150,000	0.684	0.472	.582	−0.025	0.049
$150,000+	0.610	0.457	.510	−0.032	0.051
Inv. Assets (< $25,000)					
$25,000 < $250,000	1.086	0.311	.773	0.005	0.016
$250,000+	1.317	0.472	.443	0.017	0.022
Expense difficulty	0.712	0.201	.230	−0.020	0.016
Finances control life	2.051	0.559	.008	0.049	0.021
Gov't Benefits	1.737	0.591	.105	0.037	0.026
Obj. Fin. Know.	0.925	0.078	.353	−0.005	0.005
Crypto Risk	0.553	0.059	.000	−0.036	0.006
Subj. Inv. Know.	1.369	0.150	.004	0.019	0.007
Obj. Inv. Know.	0.927	0.058	.226	−0.005	0.004
Risk Tolerance	1.040	0.059	.484	0.002	0.003
Technology	4.544	1.527	.000	0.078	0.014
Lottery	2.018	0.524	.007	0.048	0.020
Constant	0.410	0.420	.384		

Fit statistics

Log L: −300.35

Pseudo R^2: .38

AIC: 668.70

Hosmer-Lemeshow (10 groups): $\chi 2 = 4.64$, $df = 8$, $p = .80$

Table 3. AIPW Treatment Model (n = 1,450)

	Coef.	Std. Err.	p
Non-White	0.331	0.175	.058
Male	0.042	0.609	.945
Age (ref: 18–24)			
25–34	−0.226	0.583	.699
35–44	0.069	0.624	.912
45–54	0.318	0.593	.592
55–64	0.346	0.601	.564
65+	−0.980	0.655	.135
Male × Age			
25–34	0.530	0.727	.466
35–44	0.595	0.737	.419
45–54	0.262	0.715	.714
55–64	0.251	0.697	.719
65+	1.863	0.731	.011
Full time	0.551	0.192	.004
Bachelor’s degree	−0.305	0.162	.060
Income (ref: < $15,000)			
$15,000 < $25,000	0.498	0.594	.402
$25,000 < $35,000	1.198	0.542	.027
$35,000 < $50,000	0.918	0.536	.087
$50,000 < $75,000	0.795	0.501	.112
$75,000 < $100,000	1.007	0.505	.046
$100,000 < $150,000	0.701	0.514	.173
$150,000+	0.681	0.546	.213
Expense difficulty	−0.039	0.203	.848
Finances control life	0.328	0.202	.105
Gov’t Benefits	1.530	0.241	.000
Obj. Fin. Know.	−0.234	0.056	.000

Constant	−2.216	0.680	.001

Table 4. AIPW Outcome Models (n = 1,450)

	Untreated			Treated		
	Coeff.	Std. Err.	p	Coeff.	Std. Err.	p
Male	0.555	0.332	.095	−0.605	0.522	.246
Non-White	0.261	0.279	.349	−0.241	0.514	.640
Age (ref: 18−24)						
25−34	−0.512	0.527	.331	−1.396	0.932	.134
35−44	−1.244	0.540	.021	−2.296	1.035	.027
45−54	−2.058	0.589	.000	−2.881	1.055	.006
55−64	−1.775	0.542	.001	−3.440	1.092	.002
65+	−3.045	0.663	.000	−3.916	1.288	.002
Full time	−0.060	0.311	.847	0.652	0.528	.217
Bachelor's degree	−0.468	0.285	.100	1.219	0.526	.021
Income (ref: < $15,000)						
$15,000 < $25,000	−0.260	0.971	.789	−1.284	1.799	.475
$25,000 < $35,000	−0.181	0.925	.845	−2.929	1.715	.088
$35,000 < $50,000	−0.225	0.839	.789	−4.897	1.781	.006
$50,000 < $75,000	−0.289	0.803	.719	−2.956	1.626	.069
$75,000 < $100,000	−0.347	0.856	.686	−2.549	1.615	.114
$100,000 < $150,000	−0.043	0.822	.959	−3.737	1.700	.028
$150,000+	−0.430	0.900	.633	−2.878	1.734	.097
Inv. Assets (ref: < $25,000)						
$25,000 < $250,000	0.026	0.326	.937	0.816	0.598	.172
$250,000+	0.182	0.435	.676	0.795	0.664	.231
Crypto risk	−0.675	0.158	.000	−0.616	0.210	.003
Subj. investment knowledge	0.125	0.159	.431	0.614	0.233	.009
Obj. investment knowledge	−0.008	0.086	.924	−0.249	0.129	.055
Obj. financial knowledge	−0.073	0.102	.475	−0.004	0.180	.983
Risk tolerance	0.102	0.076	.178	0.004	0.119	.973
Technology proxy	1.485	0.416	.000	1.670	0.487	.001

Constant	−0.240	1.006	.811	1.664	2.006	.407

Table 5. IPWRA Treatment Model (n = 1,450)

	Coeff.	Std. Err.	p
Non-White	0.331	0.175	.058
Male	0.042	0.609	.945
Age (ref: 18−24)			
25−34	−0.226	0.583	.699
35−44	0.069	0.624	.912
45−54	0.318	0.593	.592
55−64	0.346	0.601	.564
65+	−0.980	0.655	.135
Male × Age			
25−34	0.530	0.727	.466
35−44	0.595	0.737	.419
45−54	0.262	0.715	.714
55−64	0.251	0.697	.719
65+	1.863	0.731	.011
Fulltime employment	0.551	0.192	.004
Bachelor's degree	−0.305	0.162	.060
Income (ref: < $15,000)			
$15,000 < $25,000	0.498	0.594	.402
$25,000 < $35,000	1.198	0.542	.027
$35,000 < $50,000	0.918	0.536	.087
$50,000 < $75,000	0.795	0.501	.112
$75,000 < $100,000	1.007	0.505	.046
$100,000 < $150,000	0.701	0.514	.173
$150,000+	0.681	0.546	.213
Expense difficulty	−0.039	0.203	.848
Finances control life	0.328	0.202	.105
Gov't benefits	1.530	0.241	.000
Obj. fin. knowledge	−0.234	0.056	.000

Constant	−2.216	0.680	.001

Table 6. IPWRA Outcome Models (n = 1,450)

	Untreated			Treated		
	Coeff.	Std. Err.	p	Coeff.	Std. Err.	p
Male	0.674	0.323	.037	−0.721	0.559	.197
Non-White	0.263	0.290	.364	−0.196	0.554	.724
Age (ref: 18−24)						
25−34	−0.421	0.556	.449	−1.707	1.088	.117
35−44	−1.297	0.566	.022	−3.235	1.073	.003
45−54	−1.767	0.602	.003	−3.069	1.210	.011
55−64	−1.787	0.570	.002	−3.363	1.098	.002
65+	−3.024	0.685	.000	−3.341	1.131	.003
Fulltime employment	0.052	0.315	.869	1.041	0.645	.106
College	−0.640	0.287	.026	1.655	0.644	.010
Income (ref: < $15,000)						
$15,000 < $25,000	0.018	0.948	.985	−1.511	1.985	.447
$25,000 < $35,000	−0.315	0.919	.732	−3.660	1.804	.042
$35,000 < $50,000	0.030	0.844	.971	−6.111	2.016	.002
$50,000 < $75,000	−0.256	0.812	.753	−3.239	1.845	.079
$75,000 < $100,000	−0.467	0.877	.594	−2.930	1.858	.115
$100,000 < $150,000	−0.006	0.832	.995	−4.512	1.951	.021
$150,000+	−0.360	0.912	.693	−4.786	2.038	.019
Inv. Assets (ref: < $25,000)						
$25,000 < $250,000	0.273	0.330	.408	1.317	0.629	.036
$250,000+	0.336	0.449	.453	2.082	0.753	.006
Crypto risk	−0.675	0.155	.000	−0.641	0.237	.007
Subj. investment knowledge	0.117	0.152	.442	0.200	0.222	.367
Obj. investment knowledge	−0.044	0.084	.599	−0.319	0.159	.045
Obj. finance knowledge	−0.136	0.099	.168	−0.023	0.178	.897
Risk tolerance	0.097	0.075	.195	0.015	0.106	.884
Technology proxy	1.475	0.393	.000	2.313	0.603	.000

Constant	0.023	1.044	.982	3.453	2.566	.179

Did Covid-19 Hurt Consumer Financial Wellbeing?

Factors Associated with Consumer Bankruptcy Risks During the Pandemic

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Abstract

Purpose: The COVID-19 pandemic resulted in millions of lives lost. Beyond its devastating impact, did it also hurt consumer financial wellbeing? Consumer bankruptcy is often seen as a sign of experiencing extremely overextended debt burdens. This study aimed to identify factors associated with bankruptcy risks, specifically focusing on insolvency (when total debt exceeds total asset) and debt delinquency (being late in debt payments for 60 or more days).

Design/methodology/approach: Data was from the U.S. 2022 Survey of Consumer Finances. Two bankruptcy risk variables included insolvency and debt delinquency. Potential influencing factors included in the analyses were COVID-19 induced shocks, financial capability, ownership of various debts, and demographics. Logistic regression models were used to detect potential factors associated with bankruptcy risks.

Findings: First, a COVID-19-induced shock variable, new work schedule, reduced the risk of insolvency, and four shock variables (COVID infection with serious persistent symptoms, work disruption due to childcare responsibilities, work reduction, and work increase) increased the risk of debt delinquency. Second, financial capability factors played a crucial role. Desirable financial behavior reduced both risks of insolvency and debt delinquency. Subjective financial knowledge only reduced the risk of debt delinquency. Third, the types of debts held mattered. Holding credit card debt, student loans, and other debts increased the risks of both insolvency and debt delinquency. Interestingly, holding auto loans reduced the risk of insolvency.

Research limitations/implications: The data is limited to cross sectional so that findings are only correlational. The data is from one developed economy and the results may not be generalized to other economies, especially developing economies. Also, due to the lack of direct measure of consumer bankruptcy, only bankruptcy risks are measured in the study, but the findings still can be informative for understanding consumer bankruptcy behavior.

Practical implications: The results of this study have practical implications for government, business and nonprofit organizations to help consumers reduce the bankruptcy risks. The results suggest that when facing external shocks such as the COVID-19 pandemic, any work-related adjustments may help workers maintain income levels and reduce consumer bankruptcy risks, especially debt delinquency risk. Also, consumers should be encouraged to engage in desirable financial behaviors, such as spending within their income, seeking information before making financial decisions, using financial professionals, and planning ahead, to reduce both insolvency and debt delinquency risks.

Originality/value: This study is the first to examine COVID-19 induced factors on bankruptcy risks, enriching the literature of COVID-19 impacts on consumers. Bankruptcy risks are used as negative indicators of consumer wellbeing, expanding the literature of consumer wellbeing. The study also examines if financial capability has potential to reduce bankruptcy risks, an advancement in the literature of financial capability.

Keywords*:* bankruptcy, COVID-19, debt delinquency, debt holding, financial capability, insolvency

Red, Blue, or Green? Investigating the Relationship Between Political Preferences and Money Scripts

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Abstract

Limited research has examined the association between political preference and money scripts with U.S. participants. This study explored the relationship between political preferences and money scripts with hierarchical regressions (reference group: Independent/Other). The results show that participants identified as Democrats were less likely to have money status and money vigilant tendencies. Participants who self-reported as Republicans were less likely to be avoidant with their finances, whereas self-reported Democrats were likely to avoid their finances. Financial counselors and educators may benefit from knowing their client's political preferences to understand beliefs and values and may facilitate money management discussions and planning.

Keywords: money scripts, politics, money attitudes, sociodemographic, ideology

Background

A new political season is underway as the people of the United States will soon decide who will lead the country as President. Previous research has documented that political beliefs can predict money attitudes (Furnham, 1984; Furnham, 1996; Furnham & Okamura, 1999; Lay & Furnham, 2019), whereas limited research has examined the association between political preference and money scripts with U.S. participants. Money scripts are distinctive beliefs or attitudes an individual has towards money (Klontz et al., 2011). These four unique perspectives of money scripts are described as money avoidance, money worship, money status, and money vigilance (Klontz et al., 2011). Money avoidance refers to a negative viewpoint toward money, such as "money corrupts people." Money worship refers to a view that money can enhance life, providing solutions to all life problems. Money status refers to a perspective that an individual's self-worth is reflected by their net worth. Money vigilance refers to a secretive, shameful, and cautious attitude towards money.

Purpose and Research Questions

The purpose of this study is to examine the association between one's political party preference and each of the four money script designations (money avoidance, money status, money vigilance, and money worship). The research question guiding this study is: what is the relationship between political preferences and money scripts?

Methodology

Participants

Data were collected at the 2019 State Fair in one of the north-central states to examine the financial management practices of the state's residents. Researchers received approval from their Institutional Review Board (IRB) to conduct the research. The research team occupied a booth at the fair and asked fairgoers if they would like to complete a 15 to 20-minute online survey using an iPad/tablet or a paper version of the survey. They received a university-branded drawstring bag as an incentive after completing the survey. A total of 661 individuals participated in the survey. The survey consisted of 91 closed-end questions and one open-ended question to better understand [state] families' financial management practices.

Measures

Political preferences were divided into three dichotomous variables: Republican, Democrat, and Independent/Other. The Klontz Money Script Inventory-Revised (KMSI-R) was employed to measure money avoidance, worship, status, and vigilance on a six-point Likert scale (1 = 'Strongly,' 6 = 'Strongly agree'). Values in each money script were summed up based on recommendations by Arpin et al (2018). The money avoidance subscale consisted of nine items (α = .83); the money worship consisted of seven items (α = .77), the money status subscale consisted of eight items (α = .82), and the money vigilance subscale consisted of eight items (α = .65).

Participant's ages were categorized into young adulthood (18 - 39 years old), middle adulthood (40 - 59 years old), and late adulthood (60 - older). Race/Ethnicity was measured by creating a dichotomous variable where 1 = non-Hispanic White and 0 = Black, Indigenous, People of Color (BIPOC). Gender was categorized by male, female, or "other, please specify" where participants can self-identify. Education was measured by an ordinal variable (High school degree or less, Some college or Associate Degree, Bachelor degree, and Graduate degree). Income was separated into three categories: $0 - $49,999, $50,000 - $99,999, and $100,000 or more.

Analysis

Four hierarchical regressions were employed to answer the research question. The dependent variables included money avoidance, money worship, money status, and money vigilance. The independent variables included age, gender, race/ethnicity, education, income, Republican and Democrat (Independence/Other = reference group). Missing values were handled with a listwise method.

Results

The age range of participants is well distributed: 18 - 39 years old (34.4%), 40 - 59 years old (32.4%), and 60 - or older (33.2%). Female participants comprised 59.8% of the sample, and male participants 40.2%. One of the participants reported themselves as non-binary, which was treated as missing due to the small number of participants. Non-Hispanic Whites comprise 78.1% of the sample, and Black, Indigenous, and People of Color (BIPOC) comprise 21.9%. Those who attained a bachelor's degree or higher comprised 62.9%. The most frequent income category is $100,000 or more (45.7%), then $50,000 - $99,999 (33.8%), and $0 - $49,999 (20.5%). The participants identified as Republican (25.8%), Democrat (52.6%), and Independent or others (21.5%).

Table 1 shows the results of multiple regression analysis for money scripts. The associations between sociodemographic factors and money scripts were reported in Model 1. Males were more inclined to money avoidance (B = 0.17, p <.05), whereas age (B = -0.18, p <.001) and income (B = -0.19, p <.001) were negatively associated with a money avoidance mindset. Sociodemographic factors explained 7% of the variation of money avoidance (F(5,445) = 6.68, p < .001). For money worship, only the younger tended to have a money worship mindset (B = -0.20, p < .001). Sociodemographic factors explained 5% of the variation of money worship (F(5,455) = 4.583, p <.001). While Males were positively associated with money status (B = 0.21, p <.001), non-Hispanic whites

(B = -0.30, p <.001) and education (B = -0.12, p <.001) were negatively associated with money status. The model explained 7% of the variation of money status (F(5,448) = 6.295, p <.001). For money vigilance, age (B = 0.13, p <.001) and income (B = 0.09, p <.05) were positively associated with it, which explained 4% of variation in the money vigilance (F(5,451) = 3.885, p <0.01).

The associations between political preference and money scripts were reported in Model 2. With money avoidance, findings suggest that participants who self-identified as Republicans were less likely to identify with money avoidance (B = -0.36, p < .001), whereas those who identified as Democrats were more likely to identify with money avoidance (B = 0.24, p < .01). Political preference explained 8% of money avoidance (ΔR^2= .083, F(2,442) = 21.80, p = .000). Political preferences were not associated with money worship while adding a 1% explanation (ΔR^2= .016, F(2,452) = 3.835, p = .022). In addition, Democrats were less likely to identify with money status (B = -0.26, p < .001) and less likely to identify with money vigilance (B = -0.24, p < .05). About 2 % of money status and money vigilance were explained by political preference (ΔR^2= .021, F(2,446) = 5.157, p = 0.006, ΔR^2= .027, F(2,449) = 6.550, p = 0.002, respectively). The full model results will be shared in the poster presentation.

Conclusions/Implications

This study suggests there are noticeable relationships between political preference and money scripts, which aligned with previous research on this topic (Furnham & Cuppello, 2023). Specifically, the results indicate that Republican-identifying participants are less likely to have money avoidant tendencies, and self-reported Democrats are less likely to associate with money status and money vigilant tendencies. These findings may prove insightful for financial professionals seeking to better understand their clients' money management attitudes, beliefs, and values. While direct discussion on political matters is often discouraged in practices, an open-ended question may help to understand the client's values, beliefs, and decision process, such as "Do you have any preference or concern when you make an investment decision?" with this knowledge of their money script tendencies, financial counselors and educators may be able to design programming that will facilitate an enriched discussion of their finances and planning for their futures with their clients.

Limitations

The results are not generalizable to all U.S. citizens as the data came from one state fair held and only represents those who attended it and their viewpoints. The data were collected in the summer of 2019, and about seven months later, citizens were experiencing a global pandemic, which has impacted how they have managed their finances. Political polarization has been in existence before the global pandemic for over four decades (DeSilver, 2022), however one might argue that it became more noticeable during and after the pandemic. Also, the study did not present a causal relationship between political preference and money scripts. Future researchers may further explore the influence of political preference on financial management practices and the influence of other factors on money scripts.

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Table 1. *Summary of Multiple Regression Analysis for Variables Predicting Each Money Script*

Variable	Money Avoidance								Money Worship							
	Model 1				Model 2				Model 1				Model 2			
	B	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*
Constant	2.82		0.17	0.00	2.81		0.17	0.00	3.68		0.18	0.00	3.64		0.19	0.00
Age	-0.18***	-0.18	0.05	0.00	-0.17***	-0.16	0.05	0.00	-0.21***	-0.19	0.05	0.00	-0.20***	-0.18	0.05	0.00
Male	0.17*	0.10	0.08	0.04	0.20**	0.12	0.08	0.01	0.12	0.07	0.09	0.16	0.15	0.08	0.09	0.09
Non-Hispanic White	0.12	0.06	0.10	0.23	0.16	0.07	0.10	0.11	0.00	0.00	0.11	0.98	0.01	0.01	0.11	0.91
Education	0.02	0.02	0.04	0.63	-0.02	-0.02	0.04	0.60	0.00	0.00	0.05	0.93	-0.03	-0.03	0.05	0.59
Income	-0.19***	-0.18	0.05	0.00	-0.17***	-0.16	0.05	0.00	-0.08	-0.07	0.06	0.15	-0.08	-0.07	0.06	0.17
Republican					-0.36***	-0.18	0.11	0.00					-0.10	-0.05	0.13	0.44
Democrat					0.24*	0.14	0.09	0.01					0.17	0.10	0.11	0.11
R^2	0.07				0.15***				0.05				0.06*			
F	6.68***				11.444***				4.583***				4.410***			

Table 1. *Summary of Multiple Regression Analysis for Variables Predicting Each Money Script (continued)*

Note: *p<.05, **< .01, ***< .001.

Variable	Money Status								Money Vigilance							
	Model 1				Model 2				Model 1				Model 2			
	B	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*	*B*	*β*	*SE*	*p*
Constant	2.44		0.14	0.00	2.54		0.15	0.00	3.87		0.14	0.00	3.91		0.14	0.00
Age	0.00	0.00	0.04	0.96	-0.01	-0.01	0.04	0.80	0.14***	0.16	0.04	0.00	0.13***	0.15	0.04	0.00
Male	0.21***	0.14	0.07	0.00	0.19*	0.12	0.07	0.01	-0.02	-0.02	0.07	0.72	-0.05	-0.03	0.06	0.47
Non-Hispanic White	-0.30***	-0.16	0.09	0.00	-0.29***	-0.16	0.09	0.00	0.02	0.01	0.08	0.77	0.02	0.01	0.08	0.79
Education	-0.12***	-0.15	0.04	0.00	-0.10*	-0.13	0.04	0.01	-0.05	-0.06	0.04	0.20	-0.02	-0.03	0.04	0.50
Income	0.02	0.02	0.05	0.69	0.03	0.03	0.05	0.55	0.09*	0.10	0.04	0.04	0.09*	0.10	0.04	0.05
Republican					-0.08	-0.05	0.10	0.41					0.09	0.06	0.09	0.34
Democrat					-0.26***	-0.17	0.09	0.00					-0.17*	-0.13	0.08	0.03
R^2	0.07				0.09**				0.04				0.07**			
F	6.295***				6.054***				3.885**				4.701***			

Republican, Democrat, and Female coded as 1 for yes and 0 for no. Independent/others is considered as a reference group.

Cryptocurrency Investment Mechanism: Exploring the Role of Financial Education, Investment Knowledge, and Risk Tolerance

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Abstract

This study using data from the National Financial Capability Study in 2018 and 2021 examined the impact of financial education on cryptocurrency investment decisions, focusing on the mediating roles of investment knowledge and risk tolerance. Results indicated that while objective financial knowledge often discouraged cryptocurrency investment due to perceived risks; subjective investment knowledge, enhanced by financial education, increased confidence and willingness to invest in cryptocurrency. Risk tolerance was found to partially mediate the relationship between investment knowledge and investment decisions, especially with investors having high subjective investment knowledge. These findings suggested that effective financial education should not only increase investment knowledge but also balance risk awareness with potential rewards. This research underscored the importance of designing financial literacy programs that prepare investors for the complexities of the cryptocurrency market, aiming to boost both practical financial skills and balanced investment behavior.

Keywords: cryptocurrency, financial education, investment knowledge, risk tolerance

Introduction

Cryptocurrencies have disrupted traditional financial markets, presenting a new realm of investment opportunities. Investing in cryptocurrency is a complex financial decision requiring a deep understanding of cryptocurrency concepts, characteristics, and investment processes (Kim et al. 2022). In addition, the cryptocurrency market is highly volatile, posing excess risks for investors (Ji et al., 2019) and potential negative impacts on their future wealth accumulation and financial well-being. Despite these risks, cryptocurrencies have gained popularity, with most investors either considering or already having invested in them in recent years (Lin et al., 2022). Researchers have found that only a small percentage of cryptocurrency owners have good knowledge of cryptocurrencies (Steinmetz et al., 2021) or a high level of financial literacy (Henry et al., 2019). In addition, cryptocurrency owners who lack a comprehensive understanding of crypto assets tend to exhibit lower levels of financial literacy, have limited exposure to financial education during their school years, and struggle to identify reliable sources for obtaining information when making financial product choices (Fujiki, 2020). These issues highlight the urgent need to find solutions for enhancing cryptocurrency investors' financial knowledge and skills, enabling them to make informed decisions in these volatile and high-risk markets.

Previous studies suggest that financial education equips individuals with the knowledge and skills needed for making informed investment decisions (Xiao & O'Neill 2016;Kim et al., 2022; Gibson et al., 2022). Furthermore, individuals with higher levels of objective financial knowledge acquired through financial education are more inclined to participate in risky assets like stocks and mutual funds (Liao et al., 2017;Tang & Baker, 2016) but less likely to invest in cryptocurrencies (Zhao & Zhang 2021; Kim et al., 2022). Additionally, risk tolerance plays a crucial role in an investor's decision-making process, especially when dealing with highly risky investments (Schooley & Worden, 2003). Despite the substantial influence of financial education on shaping financial knowledge, risk tolerance, and investment decision-making in traditional markets, the impact of financial education on cryptocurrency investment decisions remains emerging and unexplored. To bridge this gap in the literature, this study aimed to explore the mediating roles of investment knowledge and risk tolerance in the relationship between financial education and cryptocurrency investment decisions.

The research questions that this study intended to answer were as follows:

Research question 1: Does investment knowledge fully mediate the impact of financial education on cryptocurrency investment decisions?

Research question 2: Does risk tolerance partly mediate the impact of investment knowledge on cryptocurrency investment decisions?

While researchers have found different factors explain investment decisions in cryptocurrencies, such as overconfidence, herd behavior, subjective norms, and awareness, and social demographic variables, such as age, gender, occupation, education, and investment experience (Al-mansour, 2020; Almeida & Gonçalves, 2023; Galang et al., 2023; Nurbarani & Soepriyanto, 2022; Syarkani & Tristanto, 2022; Zhao & Zhang, 2021), this study represented the first attempt to explore the interplay role of financial education, investment knowledge, risk tolerance in influencing cryptocurrency investment decisions. By examining these dynamics, this study shed light on the importance of financial education initiatives in equipping individuals with the investment knowledge and balanced risk tolerance necessary to make informed and sound investment choices in the ever-evolving world of digital assets. Overall, this research provided practical implications for financial educators, financial planners, policymakers, and individuals seeking to make well-informed investment decisions in the cryptocurrency market.

Background

Cryptocurrency Investment Decision

Researchers have extensively studied factors impacting cryptocurrency investment decisions (Almeida & Gonçalves, 2023). Most research has focused on behavioral factors, such as herding behavior, momentum, contagion effects, investor sentiment, and decision-making biases (Ballis & Verousis, 2022). For example, Bouri et al. (2019) studied herding behavior within the cryptocurrency market and observed that herding tendencies heightened during increased uncertainty of the market volatility. In addition, Nurbarani and Soepriyanto (2022) found that overconfidence and financial awareness positively influenced cryptocurrency investment decisions, while subjective norms, such as investment beliefs, were moderated by age and investment experience. Similarly, Mattke et al. (2021) found that profit expectancy, ease of acquisition, ideology, investment skills, and risk affinity were personal factors influencing bitcoin investment. In the context of Bitcoin, the first cryptocurrency, speculative investment behavior was primarily motivated by impulsive decision-making and limited self-control, resulting in adverse outcomes (Ryu & Ko, 2019). Ryu and Ko (2019) also suggested that the influence of these cognitive systems on Bitcoin speculation varies depending on the level of objective and subjective knowledge. These results could lead to more in-depth research on the impact of financial education, which can enhance investment knowledge in cryptocurrency investment decision-making.

Other cryptocurrency research focused on market factors that can impact cryptocurrency investment decisions. Li et al. (2014) found that news and media could enhance investors' knowledge and affect their trading activities. Specifically, Generation Z, known for their heavy use of social media, tended to follow the investment decisions of others with successful portfolios rather than conducting their market analysis (Paseru et al., 2023). Paseru et al. concluded that potentially high profit, market availability, asset popularities, and fear of missing out impacted GenZ's investment decision in the cryptocurrency market. Furthermore, Luo et al. (2021) addressed the challenge of explaining Bitcoin's price fluctuations, emphasizing the role of ambiguity aversion as a source of abnormal returns.

Finally, most of the research on cryptocurrency investment decisions investigated individual demographic factors that can impact cryptocurrency decisions (Xi et al., 2020, Steinmetz et al., 2021; Fujiki, 2020; Henry et al., 2019). Xi et al. (2020) found that demographic characteristics, such as age, gender, education, occupation, and previous investment experience, significantly associated with cryptocurrency investment decisions. Despite the regions under examination, males and individuals in younger age groups appeared more inclined to invest in cryptocurrencies (Steinmetz et al., 2021). In addition, Fujiki (2020) found that Japanese individuals who were younger and had lower income levels tended to invest in crypto assets more extensively. Henry et al. (2019) discovered that Canadians with higher levels of education were more inclined to embrace contactless debit or credit cards and mobile payment technologies, while those with lower levels of education were turning to Bitcoin.

Financial Education

One of the specific areas that researchers have explored was the impact of financial education on various investment decisions, especially within the domain of financial literacy literature. The educational foundation provided by financial education equipped individuals with the financial knowledge and skill to navigate complex investments, ultimately leading to more sound and well-informed investment decisions (Xiao & O'Neill, 2016); Kim et al., 2022; Gibson et al., 2022). Bayer et al. (2009) found that financial education at the workplace significantly boosted participation and contribution to voluntary investment options in retirement plans. In addition, Cole et al. (2014) argued that financial education improved stock market participation and reduced the risk of negative debt-related consequences. Maté et al. (2021) underscored the pivotal role of financial knowledge and financial education in influencing informed financial decisions, such as engaging in investment fund ownership and participating in equity and fixed-income markets. Likewise, Gibson et al. (2022) found that financial education added value to subsequent positive financial behaviors, including investment decisions.

Investment Knowledge

Financial knowledge, often nurtured through financial education, was a fundamental component that significantly influenced an individual's financial decisions (Hilgert & Hogarth, 2003; Huston, 2010), including investment decisions. In prior studies, general financial knowledge was commonly employed to explore objective and subjective knowledge when investigating the influence of financial literacy on various investment behaviors (Tang & Baker, 2016; Zhao & Zhang, 2021). The influence of each type of financial knowledge on investment behaviors had produced mixed results in prior research. Researchers have discovered a positive correlation between subjective and objective financial knowledge and stock market participation (Akhtar & Das, 2019; Yao & Xu, 2015). In addition, Liao et al. (2017) and Tang and Baker (2016) found that individuals possessing higher objective financial knowledge exhibited a higher propensity to invest in risky financial assets, such as stocks and mutual funds. Similarly, Carbo-Valverde et al. (2023) found that financial literacy measured by objective knowledge was positively associated with cryptocurrency ownership. However, Fujiki (2020) argued that objective financial knowledge did not significantly impact risky investments, including cryptocurrency.

Investment knowledge was a specific part of general financial knowledge, which could also be categorized into both subjective and objective investment knowledge. Research on how investment knowledge could impact financial behaviors or cryptocurrencies has still not been widely researched. For instance, Enete et al. (2019) found that subjective and objective investment knowledge about exchange-traded funds (ETF) securities operated independently, suggesting that enhancing both types of knowledge could positively influence ETF ownership. Objective investment knowledge impacted investors' ability to formulate effective investment plans, mediated by their confidence (Forbes & Kara, 2010). Self-assessed investment knowledge and having a long-term financial plan showed a positive correlation with the participation of households in securities markets (Yao & Xu, 2015). More recently, Zhao and Zhang (2021) and Kim et al. (2022) discovered that subjective investment knowledge influenced cryptocurrency investment, while objective investment knowledge was negatively related to cryptocurrency investment. The inconsistent findings may be attributed to the perceptual bias between investors' subjective investment knowledge and their actual level of objective investment knowledge.

Risk Tolerance

Risk tolerance refers to an individual's or investor's willingness and capacity to endure and manage financial risks associated with various investment choices (Hanna & Chen, 1997; Hanna et al., 2001). Previous studies have found that financial education notably affected risk tolerance, equipping individuals with the skills and knowledge necessary to assess and manage risk effectively (Maté et al. 2021). For example, Grable and Joo (1997) utilized an index derived from two survey questions related to investment knowledge and risk understanding, revealing that financial risk tolerance increased with higher financial knowledge. In addition, Ryack (2011) discovered that individuals who received financial education, particularly those who engaged in stock market games during their high school years, displayed higher risk tolerance levels. More recently, Tharayil (2023) found that individuals with a college education and those with lower financial literacy who haven't attended college exhibit increased levels of financial risk tolerance when participating in financial education courses.

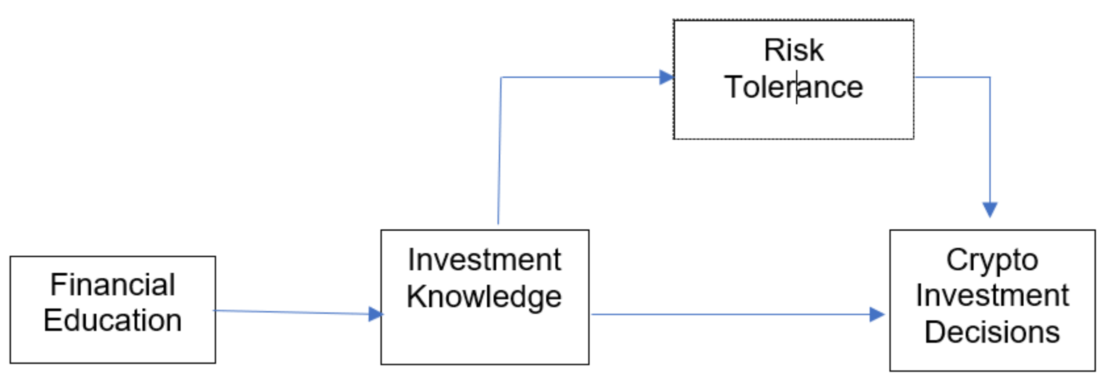
Furthermore, risk tolerance was pivotal in an investor's decision-making process, mainly when dealing with highly risky investment instruments (Schooley & Worden, 2003). Cryptocurrencies may be classified as high-risk investments due to their price volatility and speculative nature (Baek & Elbeck, 2015). Prior studies have indicated a positive association between risk tolerance and risky investment decisions, including cryptocurrency assets. Wang and Hanna (1997) demonstrated a positive relationship between risk tolerance and investments in risky assets, especially among older investors. Investors with higher risk tolerance were more likely to allocate a more significant portion of their portfolio to cryptocurrencies and may opt for more volatile assets (Santoso & Modjo, 2022; Xi et al., 2020) while risk-averse individuals may avoid them or choose more stable options (Hanna & Chen, 1997). In addition, cryptocurrency owners seemed to have higher risk tolerance than non-holders (Fujiki, 2020). Hackethal et al. (2022) also found that cryptocurrency owners often exhibited investment biases and maintained portfolios with a high level of risk tolerance.

Conceptual Background and Theories

This research aimed to explore the mediating roles of investment knowledge in the relationship between financial education and cryptocurrency investment decisions. Second, this research also aimed to explore the mediating role of risk tolerance in the relationship between investment knowledge and cryptocurrency investment decisions. To accomplish these objectives, this research employed a theoretical framework by Huston (2010) and Prospect Theory developed by Kahneman and Tversky (1979), which illustrated the connections between financial education, investment knowledge, risk tolerance, and cryptocurrency investment decisions (see Figure 1).

Figure 1:

Conceptual Model of the Research



According to Huston (2010), financial education served as an input designed to increase an individual's human capital, particularly their financial knowledge and application, ultimately enhancing their lifetime utility from financial behaviors that promote financial well-being. This argument aligns with Becker's human capital theory (1994), which suggested that education and training, as the most critical investments, can improve human capital regarding knowledge and skills, leading to improved financial outcomes. The first set of hypotheses were:

H1a: Subjective investment knowledge fully mediated the relationship between financial education and current cryptocurrency ownership.

H1b: Objective investment knowledge fully mediated the relationship between financial education and current cryptocurrency ownership.

H1c: Subjective investment knowledge fully mediated the relationship between financial education and future cryptocurrency investment.

H1d: Objective investment knowledge fully mediated the relationship between financial education and future cryptocurrency investment.

Furthermore, the prospect theory developed by Kahneman and Tversky (1979) suggested that individuals evaluate potential losses and gains differently, with losses typically having a more substantial psychological impact than equivalent gains. As individuals acquire more investment knowledge, their perception of what constitutes a loss or a gain can change, potentially altering their risk tolerance (Tharayil, 2023; Rooij et al., 2012). Therefore, individuals with higher information and knowledge were likely to engage in more informed decision-making, better assessing the risks and potential returns associated with cryptocurrency investments. The second set of hypotheses were as follows:

H2a: Risk Tolerance partly mediated the relationship between Subjective Investment Knowledge and Current Cryptocurrency Ownership

H2b: Risk Tolerance partly mediated the relationship between Subjective Investment Knowledge and Future Cryptocurrency Investment

H2c: Risk Tolerance mediated partly the relationship between Objective Investment Knowledge and Current Cryptocurrency Ownership

H2d: Risk Tolerance partly mediated the relationship between Objective Investment Knowledge and Future Cryptocurrency Investment

Methodology

Data Collection

This research relied on secondary data from the National Financial Capability Study State by State (NFCS) - Investor Survey for the years 2018 and 2021. The NFCS Investor Surveys explored the investment decisions of 2,003 U.S. adults in 2018 and 2,824 U.S. adults in 2021, who owned investments outside retirement accounts, providing insights into their behaviors, attitudes, knowledge, and influences (Lin et al., 2022). The combination of these two surveys offered comprehensive information about cryptocurrency investment decisions, financial education, investment knowledge, risk tolerance, and demographic data of U.S. investors, making it suitable for this research.

Cryptocurrency investment decisions were proxied through two survey questions, asking participants if they had invested either directly or through a fund that invests in cryptocurrencies, and if they were considering investing in cryptocurrency in the future, with "Yes/No" as responses. The decisions to invest in cryptocurrencies were measured as two binary variables (Yes/No), coded based on the participants' answers: 1 – Yes, 0 – No.

Financial education was operationalized by considering whether participants received financial education during various life stages (offered by a school, college, or workplace). In the NFCS Investor Survey, participants were asked, "Was financial education offered by a school or college you attended, or a workplace where you were employed?" The response options were: "Yes, and I participated in the financial education" (coded as 1), "Yes, but I did not participate in the financial education offered" or "No" (both coded as 0). Participants who participated in financial education were coded as 1, and those who did not participate were coded as 0. While this may not be an ideal measurement, it served as a proxy for assessing whether an investor received financial education at different life stages.

Two variables were used to measure participants' subjective and objective investment knowledge. Subjective investment knowledge was measured based on the NFCS self-assessment question that asked participants to rate their overall knowledge about investing on a scale from one to seven. Based on their responses, this subjective investment knowledge variable was coded from 1 to 7. Additionally, participants were asked ten multiple-choice questions to objectively measure their investment knowledge, covering various aspects such as compound interest, inflation, and investment assets. This objective investment knowledge variable was computed based on the number of correct answers provided by the participants and coded from 0 to 10 (no correct answers – 10 correct answers).

In this research, risk tolerance was measured using available scales. Participants were asked, "Which of the following statements comes closest to describing the amount of financial risk that you are willing to take when you save or make investments?" Responses ranged from 1 (willing to take substantial financial risk) to 4 (not willing to take any financial risk). This variable was re-coded to reflect risk tolerance from low (1) to high (4).

Finally, demographic variables, including age, gender, income, education, and ethnicity, were added as covariates in the mediation analysis. Age was categorized into three groups: 18-34, 35-54, and 55+, coded from 1 to 3. Gender was classified as a binary variable with male (1) and female (2). Ethnicity was simplified into White (1) and Non-White (2) categories. Education was divided between those with some college or less (1) and those with a college degree or higher (2). Income was segmented into three brackets: less than $50,000 (1), between $50,000 and $99,999 (2), and $100,000 or more (3).

Causal Mediation Analysis

Traditional mediation analysis, based on the statistical modeling approach by Baron & Kenny (1986), was updated in this research through causal mediation analysis using STATA 18. Unlike traditional methods, causal mediation focuses on causal inference and counterfactual reasoning, providing a more robust framework. It evaluates hypothetical scenarios like Y[1, M(0)]—the outcome if treatment was applied without mediator influence, and Y[0, M(1)]—the outcome without treatment but with mediator influence at its treated level. These scenarios address the fundamental problem of causal inference by estimating total, direct, and indirect effects without observing both potential states. This study aimed to determine the impact of financial education on cryptocurrency investment decisions, analyzing outcomes under varying scenarios of education and investment knowledge levels.

Results

Descriptive Statistics

The descriptive data provided insights into various variables across 2018 and 2021, highlighting shifts in financial behaviors and demographics (see Table 1). The overall observations remained consistent at 3,100 across all variables.

Table 1:

Proportions of Variables

Variables		***NFCS year***			
Current Crypto Ownership		***2018***	***2021***	***Total***	***(%)***
	0	1.100	1462	2.562	82.65%
	1	136	402	538	17.35%
Total		***1.236***	***1.864***	***3.100***	***100%***
Future Crypto Investment		***2018***	***2021***	***Total***	
	0	1.004	1.312	2.316	74.71%
	1	232	552	784	25.29%
Total		***1.236***	***1.864***	***3.100***	***100%***
Financial Education		***2018***	***2021***	***Total***	***Percent***

0 – No		879	1325	2204	71.10%
1 - Yes		357	539	896	28.90%
Total		***1.236***	***1.864***	***3.100***	***100%***
Subjective Investment Knowledge		***2018***	***2021***		
1 - Very low		26	52	78	2.52%
	2	44	70	114	3.68%
	3	76	168	244	7.87%
	4	237	320	557	17.97%
	5	469	671	1140	36.77%
	6	255	405	660	21.29%
7 - Very high		129	178	307	9.90%
Total		***1.236***	***1.864***	***3.100***	***100%***
Objective Investment Knowledge		*2018*	*2021*	*Total*	
	0	21	32	53	1.71%
	1	76	135	211	6.81%
	2	159	235	394	12.71%
	3	216	319	535	17.26%
	4	255	335	590	19.03%
	5	217	347	564	18.19%
	6	165	273	438	14.13%
	7	121	167	288	9.29%
	8	6	21	27	0.87%
Total		***1.236***	***1.864***	***3.100***	***100%***
Risk Tolerance		***2018***	***2021***	***Total***	
	1	112	160	272	8.77%
	2	642	1.008	1.650	53.23%
	3	384	517	901	29.06%
	4	98	179	277	8.94%
Total		1.236	1.864	3.100	100%

Gender	*2018*	*2021*	*Total*	
Male	740	1174	1.914	61.74%
Female	496	690	1.186	38.26%
Total	***1.236***	***1.864***	***3.100***	***100%***
Age	***2018***	***2021***	***Total***	
18-34	153	211	364	11.74%
35-54	316	465	781	25.19%
55+	767	1.188	1.955	63.06%
Total	***1.236***	***1.864***	***3.100***	***100%***
Education	***2018***	***2021***	***Total***	
Some college or less (incl. associate degree)	510	715	1.225	39.52%
College grad (Bachelor's) or more	726	1.149	1.875	60.48%
Total	1.236	1.864	3.100	100%
Ethnicity	***2018***	***2021***	***Total***	
White non-Hispanic	1.002	1.535	2.537	81.84%
Non-White	234	329	563	18.16%
Total	***1.236***	***1.864***	***3.100***	***100%***
Income	***2018***	***2021***	***Total***	
<$50K	280	382	662	21.35%
$50-$100K	523	731	1.254	40.45%
$100K+	433	751	1.184	38.19%
Total	***1.236***	***1.864***	***3.100***	***100%***

In Table 1, cryptocurrency ownership increased from 11% in 2018 to 21.56% in 2021, with the overall ownership average at 17.35%. Interest in future investments also grew, reaching 25.29% of respondents considering it by 2021. In addition, most respondents lacked formal financial education, with 71.10% reporting none. Slight growth was noted in those with financial education, increasing marginally from 28.8% in 2018 to 28.9% in 2021. Furthermore, subjective investment knowledge was moderate, with most ratings around the middle of the scale. Objective knowledge showed a trend towards moderate levels, with the most common scores being 3, 4, and 5. Regarding risk tolerance, the majority of participants preferred low to moderate risk, with only a small percentage (8.94%) opting for higher risk levels, indicating a generally cautious approach. Finally, the sample mainly consisted of older, college-educated white non-Hispanic males, mostly from the middle-income range of $50K-$100K.

Causal Mediation Analysis

To answer the first research question, this study explored whether individuals who participated in financial education programs tended to possess greater both subjective and objective investment knowledge, which, in turn, influenced their decisions regarding current cryptocurrency ownership and future cryptocurrency investment. In addition, covariates including gender, age, ethnicity, education, and income were added to outcome models. In addition, all models utilized robust standard errors in the estimations. The results were shown in Table 2.

Table 2:
Mediation Analysis with the Relationship between Financial Education and Cryptocurrency Investment Decision, mediated by Investment Knowledge

	Model 1a	Model 1b	Model 1c	Model 1d
	Coefficient/p-value	Coefficient/p-value	Coefficient/p-value	Coefficient/p-value
NIE - Natural Indirect Effect				
Financial Education				
(1 vs. 0)	0.017***	-0.007***	0.015***	-0.006***
	0.000	*0.002*	*0.000*	*0.010*
Odd ratios	1.134***	0.948***	1.084***	0.967***
p-value	*0.000*	*0.001*	*0.001*	*0.009*
NDE - Natural Direct Effect				
Financial Education				
(1 vs. 0)	-0.020	-0.005	-0.009	0.003
	0.119	*0.699*	*0.551*	*0.863*
Odd ratios	0.864	0.964	0.953	1.014
p-value	*0.136*	*0.700*	*0.553*	*0.863*
TE - Total Effect				
Financial Education				
(1 vs. 0)	-0.003	-0.012	0.006	-0.004
	0.827	*0.334*	*0.684*	*0.803*
Odd ratios	0.980	0.914	1.033	0.980
p-value	*0.827*	*0.340*	*0.683*	*0.803*

In Model 1a, the study found that financial education indirectly influences cryptocurrency ownership through subjective financial knowledge (coefficient 0.017, p-value < 0.001), supporting a 13.4% increase in ownership odds per unit increase in knowledge. This confirms that subjective knowledge fully mediates this relationship, aligning with Hypothesis H1a. In addition, model 1b results indicated that financial education decreases the likelihood of cryptocurrency ownership by improving objective knowledge (coefficient -0.007, p-value = 0.002), leading to a 5.2% reduction in ownership odds. This suggests full mediation by objective knowledge, supporting Hypothesis H1b. Furthermore, in Model 1c, increased subjective financial knowledge from financial education positively affected future cryptocurrency investment intentions (coefficient 0.015, p-value < 0.001), increasing investment odds by 8.4%. This supports Hypothesis H1c, indicating full mediation by subjective knowledge. Last, model 1d showed that enhanced objective knowledge from financial education negatively impacts future cryptocurrency investment intentions (coefficient -0.006, p-value = 0.010), reducing investment odds by 3.3%. This result supports Hypothesis H1d, highlighting full mediation by objective knowledge. Across all Model 1s, Natural Direct Effects (NDE) and Total Effects (TE) were not significant, suggesting that financial education does not directly affect cryptocurrency investment decisions without knowledge mediation, and its overall impact is minimal.

Figure 2:

Effects of Financial Education on Cryptocurrency Investment Decision, meditated by Investment Knowledge

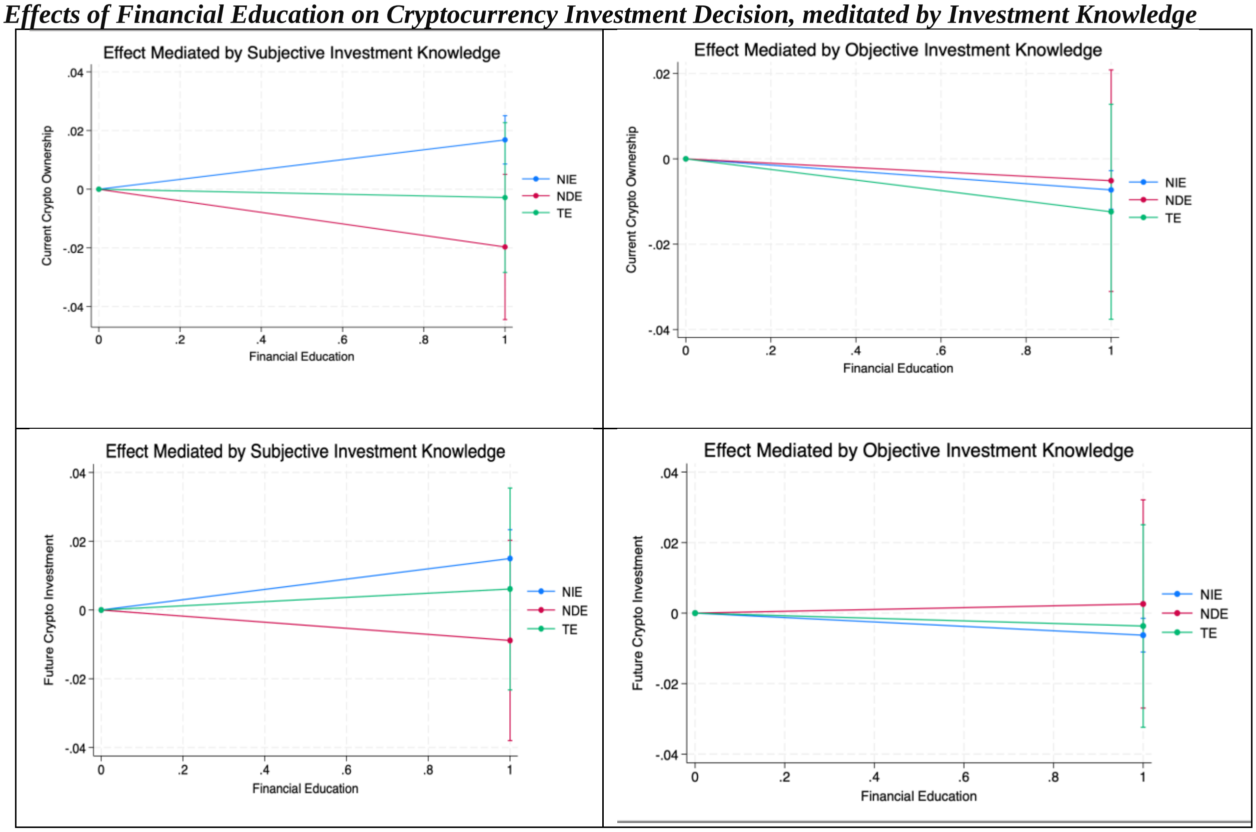


Figure 2 visualized the effects of financial education on cryptocurrency investment decisions across four models, using lines to represent different effects: Natural Indirect Effect (NIE, blue line), Natural Direct Effect (NDE, red line), and Total Effect (TE, green line). In Model 1a, the NIE indicated that as financial education increased, so did its positive mediated impact on cryptocurrency ownership via subjective investment knowledge. The NDE line was flat, showing that the direct impact of financial education on ownership was minimal. Meanwhile, the TE line trended upward slightly, suggesting that the overall influence of financial education on cryptocurrency investments was positive but mainly driven by indirect effects. This graph effectively supported the study's analysis of financial education's mediated impact on investment decisions.

In addition, to answer the second research question, this study explored whether individuals with varied levels of investment knowledge impacted their risk tolerance and how this, in turn, impacted their decisions regarding cryptocurrency investments, following the prospect theory by Kahneman and Tversky (1979). Again, all models utilized robust standard errors in the estimations. In addition, covariates, including gender, age, ethnicity, education, and income, were added to the outcome models. The results were shown in Table 3 and Table 4.

Model 2a and 2b explored the influence of subjective investment knowledge on cryptocurrency ownership and future investment, mediated by risk tolerance. Model 2a found that at higher knowledge levels, increased subjective investment knowledge significantly raised the odds of owning cryptocurrency by 76.3% at level 7, via increased risk tolerance. This relationship was significant only at the highest knowledge levels (levels 6 and 7, $p<0.05$), partly supporting Hypothesis H2a. Similarly, model 2b showed that at the higher levels (from 4 to 7), there was a 76.1% increase in the likelihood of planning future cryptocurrency investments, mediated by risk tolerance at the highest level of subjective investment knowledge. The Total Effects emphasized the strong influence of subjective knowledge on future investment decisions, partially supporting Hypothesis H2c.

Table 4:
Subjective Investment Knowledge as the Independent Variable

	Model 2a		Model 2b	
	Odds ratio	p-value	Odds ratio	p-value
NIE - Natural Indirect Effect				
Subjective Investment Knowledge				
2 vs 1 - Very low	1.010	0.727	1.055	0.515
3 vs 1 - Very low	1.080	0.169	1.075	0.163
4 vs 1 - Very low	1.132**	0.047	1.187	0.013
5 vs 1 - Very low	1.289***	0.000	1.300***	0.000
6 vs 1 - Very low	1.422***	0.000	1.487***	0.000
7 vs 1 - Very low	1.763***	0.000	1.761***	0.000
NDE - Natural Direct Effect				
Subjective Investment Knowledge				
2 vs 1 - Very low	0.664	0.384	0.429	0.051
3 vs 1 - Very low	0.996	0.991	1.300	0.400
4 vs 1 - Very low	0.995	0.99	1.001	0.997
5 vs 1 - Very low	1.065	0.859	1.142	0.647
6 vs 1 - Very low	1.416	0.338	1.278	0.415
7 vs 1 - Very low	2.719***	0.008	2.125**	0.016
TE - Total Effect				

Subjective Investment Knowledge				
2 vs 1 - Very low	0.671	0.396	0.453	0.067
3 vs 1 - Very low	1.076	0.854	1.398	0.285
4 vs 1 - Very low	1.127	0.748	1.188	0.565
5 vs 1 - Very low	1.372	0.383	1.485	0.174
6 vs 1 - Very low	2.014	0.056	1.900*	0.030
7 vs 1 - Very low	4.794***	0.000	3.742***	0.000

Models 2c and 2d addressed the impact of objective investment knowledge, mediated by risk tolerance on cryptocurrency ownership and future cryptocurrency investment, repsectively. In Model 2c, only the highest level of objective knowledge (level 8) showed a significant effect, with a 109.3% increase in the odds of owning cryptocurrency. However, the Total Effects were not significant, indicating no overall impact of objective knowledge on ownership and not supporting Hypothesis H2b. Model 2d revealed that at level 8, objective knowledge increased the likelihood of future cryptocurrency investment by 110.4%, mediated by risk tolerance. Like in Model 2c, the Total Effects showed no significant impact across all levels of objective knowledge, thus not supporting Hypothesis H2d.

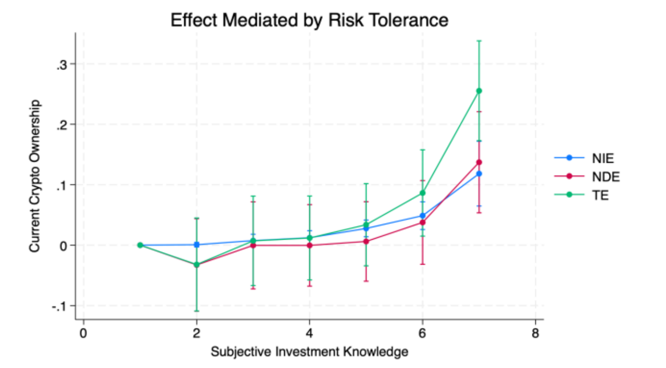
Table 5
Objective Investment Knowledge as an Independent Variable

	Model 2c		Model 2d	
	Odds ratio	p-value	Odds ratio	p-value
NIE - Natural Indirect Effect				
Objective Investment Knowledge				
(1 vs 0) very low	1.055	0.399	1.027	0.449
(2 vs 0)	1.200	0.081	1.158	0.081
(3 vs 0)	1.216*	0.029	1.224*	0.025
(4 vs 0)	1.095	0.290	1.117	0.283
(5 vs 0)	1.081	0.271	1.080	0.263
(6 vs 0)	1.059	0.253	1.058	0.238
(7 vs 0)	1.209	0.063	1.266	0.023
(8 vs 0) very low	2.093	0.046*	2.104	0.024*
NDE - Natural Direct Effect				
Objective Investment Knowledge				

(1 vs 0) very low	1.268	0.489	1.083	0.800
(2 vs 0)	0.815	0.538	1.070	0.815
(3 vs 0)	0.898	0.742	1.037	0.899
(4 vs 0)	0.757	0.397	0.837	0.532
(5 vs 0)	0.692	0.270	0.908	0.741
(6 vs 0)	0.792	0.497	0.816	0.501
(7 vs 0)	0.702	0.324	0.833	0.549
(8 vs 0) very low	1.094	0.875	1.066	0.897
TE - Total Effect				
Objective Investment Knowledge				
(1 vs 0) very low	0.045	0.391	1.338	0.419
(2 vs 0)	-0.003	0.950	0.978	0.950
(3 vs 0)	0.013	0.796	1.091	0.800
(4 vs 0)	-0.025	0.613	0.829	0.594
(5 vs 0)	-0.038	0.446	0.747	0.409
(6 vs 0)	-0.024	0.635	0.839	0.620
(7 vs 0)	-0.022	0.668	0.849	0.657
(8 vs 0) very low	0.150	0.116	2.289	0.101

Finally, Figure 3 depicted the effects of investment knowledge on cryptocurrency investment decisions across four models. In the first graph, the blue line representing the Natural Indirect Effect (NIE) showed an upward trend as subjective investment knowledge increased from 2 to 7, suggesting that higher subjective knowledge, mediated by risk tolerance, enhances the likelihood of owning cryptocurrency. The trend intensified at levels 6 and 7, highlighting a stronger mediation by risk tolerance. The red line, indicating the Natural Direct Effect (NDE), remained flat, suggesting minimal direct impact of subjective knowledge on cryptocurrency ownership at lower levels. Lastly, the green line for the Total Effect (TE) showed a significant rise at higher knowledge levels, indicating that the overall effect is largely driven by the indirect effects through risk tolerance. This visual alignment supports the analysis's findings.

Figure 3:
Effects of Investment Knowledge on Cryptocurrency Investment Decisions, meditated by Risk Tolerance


Effect Mediated by Risk Tolerance
Current Crypto Ownership
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.2
.1
0
-.1
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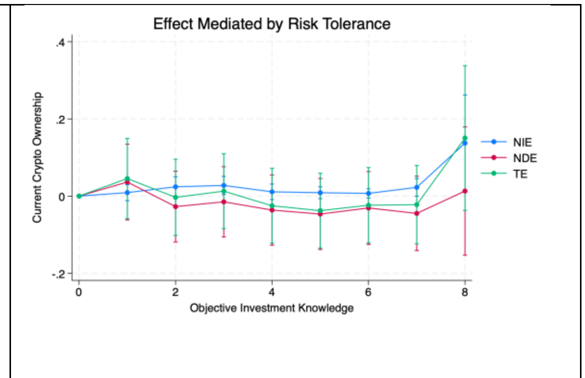
2
4
6
8
Subjective Investment Knowledge
NIE
NDE
TE


Effect Mediated by Risk Tolerance
Current Crypto Ownership
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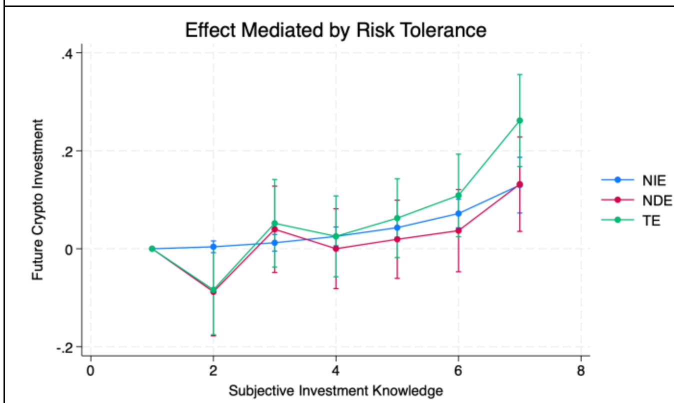
Objective Investment Knowledge
NIE
NDE
TE


Effect Mediated by Risk Tolerance
Future Crypto Investment
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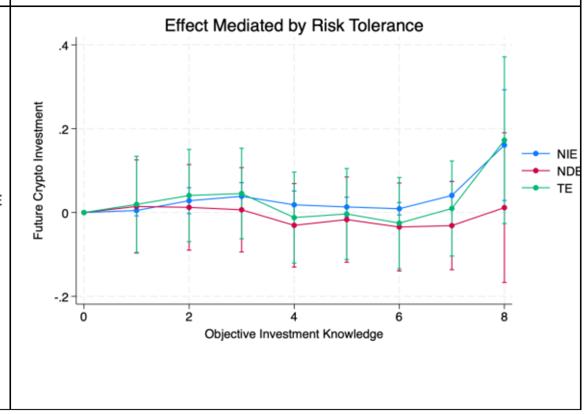
Subjective Investment Knowledge
NIE
NDE
TE


Effect Mediated by Risk Tolerance
Future Crypto Investment
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Objective Investment Knowledge
NIE
NDE
TE

Discussion and Implications

The results from the first mediation analysis collectively revealed implications regarding the interplay between financial education, investment knowledge, and cryptocurrency investment decisions. From the findings, the positive indirect effects of financial education on cryptocurrency ownership and future investment intentions, as mediated by subjective investment knowledge (as seen in Models 1a and 1c), implied that educational programs can enhance investors' confidence and willingness to engage in cryptocurrency markets. This suggested a two-fold strategy for practitioners and policymakers: focusing on financial education that builds self-assessment of financial competence and ensuring that these programs are future-oriented to guide long-term investment planning.

On the other hand, the contrasting effects found in Models 1b and 1d, where objective investment knowledge either diminished the likelihood of owning cryptocurrency or impacted future investment intentions, highlight the complex role of financial education. Individuals with higher objective financial knowledge were less likely to invest in cryptocurrency, viewing it as a risky and speculative investment. These results were aligned with previous literature (Zhao and Zhang 2020; Kim et al. 2022). However, from a practical viewpoint, the effect might not be as strong as expected, as some people still invested in cryptocurrency due to behavioral factors (Almeida and Gonçalves 2023; Ballis and Verousis, 2022). Practitioners must ensure that while financial education delivered a thorough understanding of the cryptocurrency market, it also addressed potential biases and fears that may lead to cryptocurrency investment.

Moreover, the findings from the second mediation analysis collectively provided implications about the relationships among investment knowledge, risk tolerance, and cryptocurrency investment decisions. Models 2a and 2b demonstrated that as subjective investment knowledge increased, so did the propensity to engage in cryptocurrency transactions, facilitated by increased risk tolerance. Similar to previous research, the results prove that risk tolerance increased when individuals had more financial education and knowledge (Maté et al., 2021). This can be explained by the fact that people with higher subjective investment knowledge might exhibit greater overconfidence and risk tolerance, being more confident in their risky investments. These outcomes suggested that financial education initiatives should improve participants' perceived knowledge of financial markets, particularly cryptocurrencies, to enhance their confidence and willingness to participate in these markets.
Conversely, findings from Model 2c and Model 2d illustrated that increased objective investment knowledge did not uniformly lead to increased cryptocurrency investment both directly or indirectly through risk tolerance. These findings indicated that while objective knowledge about cryptocurrencies can enhance risk tolerance and promote investment in cryptocurrency with individuals with a higher level of objective investment knowledge, its overall effect was dependent on objective investment knowledge. This suggested that financial education programs must be thorough and detailed, particularly when addressing high-risk investment areas like cryptocurrencies.

In synthesizing the implications and discussions from all models, it became clear that investment knowledge and risk tolerance impacted the pathway from financial education to cryptocurrency investment behaviors. Practitioners should consider creating more interactive and engaging financial education programs catering to varying financial knowledge and confidence levels. For policymakers, these results advocated promoting a financial education framework that integrates risk management and decision-making skills, preparing individuals for the complexities of modern investment landscapes like cryptocurrencies. Moreover, understanding these relationships can guide the formulation of more targeted, effective financial education programs that support safe and informed participation in emerging financial technologies like cryptocurrencies. The study may assist in mitigating the potential risks associated with cryptocurrency ownership by identifying how financial education programs can be optimized to cater to varying levels of investment knowledge and risk tolerance.

The current study has limitations. Firstly, its use of cross-sectional and observational data makes it difficult to establish clear causality between financial education and investment behaviors, and potential unmeasured confounding variables may bias the results. Additionally, the sample may not fully reflect the diversity of cryptocurrency investors, lacking representation from younger or more technologically adept individuals. Future research should include longitudinal studies to more clearly define the relationships between financial education, investment knowledge, and investment decisions, and expand the sample to improve the study's generalizability.

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Financial Factors and Relationship Quality: A Literature Review

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Abstract

The role of many relational clinicians is to strengthen relationship quality. To promote relationship quality and to systemically demonstrate how couple financial factors contribute to couple relationship quality, this review examines nineteen papers about couple finances relationship quality. Out of the papers examined, four themes emerged: materialism, financial management behaviors, values, and financial stress. Strengthening relationship quality may include minimizing materialism and financial stress, while also building shared financial values and increasing positive financial management behaviors.

Introduction

Understanding the factors associated with relationship quality is important because it allows therapists and counselors to recognize the areas of a relationship that, if strengthened, may significantly improve the overall quality of the relationship. One potential reason for seeking therapy or counseling services is to improve the relationship. More research on this topic is needed so that professionals are working with updated information and can provide better quality care for their clients. Relationship interactions are complex, meaning a multitude of factors influence relationship wellbeing. Identifying certain themes may provide a basis for the application of interventions to target those factors.

Relationship satisfaction is an important element of romantic relationships because it is an indicator of overall health, wellbeing, and longevity, while also existing as one of the central tenets of many individuals' lives (Bühler et al., 2021; LeBaron et al., 2018). Although there is not an agreed upon conceptualization of relationship satisfaction (Gerlach et al., 2020), for the purposes of this study relationship satisfaction refers to a subjective evaluation of how well a romantic relationship is thriving based on each partner's sense of fulfillment with the current relationship. Satisfaction is one component of relationship quality, a broader measurement involving additional elements such as trust and intimacy. Both relationship satisfaction and relationship quality are important to consider when understanding and seeking to improve overall relationship wellbeing.

The purpose of this review is to better understand how financial factors are related to relationship quality in various formulations of romantic relationships. This includes married and unmarried couples, as well as emerging adult couples compared to older adult couples. Potential factors related to financial behaviors and relationship quality have yet to be systematically reviewed for repeating themes or apparent contradictions. This study will categorize relevant financial factors that may impact relationship quality.

Methodology

Data

The study was conducted as a systematic review of peer-reviewed scholarly journal articles. Scopus was used as the indexing platform due to the breadth of articles housed under the site. Key terms were searched together, such as “marital quality”, “relationship quality”, couple relationships, “materialism”, “marital satisfaction” or “relationship satisfaction” within the purview of an article's title, abstract, or keywords. These searches generated a list of 20 articles. One article was deemed irrelevant and was removed from the final analysis. The 19 papers included in the final review, along with the relevant findings, are listed in table 1.

Analyses

Four themes were identified. Every article was categorized into one of those four themes: materialism, financial management behaviors, values, or financial stress. The categorization was completed based on specific terms discussed in the results section of the study or in the interpretation of those results by the initial researchers. These themes are defined below. Each theme contains a minimum of three articles for which a significant finding exists. Some articles fit multiple themes, as they studied several complex topics. Each article was included in the analysis of every theme represented in that study, meaning that several of the articles appear in more than one section below. A brief comparison and contrast of the findings were analyzed and discussed.

Results

Materialism

Materialism is the degree of valuation assigned to tangible possessions in relation to ideas, interactions, and relationships. One significant factor associated with relationship satisfaction among various couple configurations is the prevalence of materialism within the relationship (Cappetto & Tadros, 2021). Someone who is high in materialism attributes greater value to possessions or goods in contrast to the amount they value relationships and interactions. Individuals who are highly materialistic tend to experience more compulsive buying tendencies and increased financial worry due to lower levels of savings and lower future spending power (Garðarsdóttir & Dittmar, 2012). Materialism operates on a continuum rather than set categories. Individuals can neither be purely materialist nor non-materialist, but instead embody a gradation of materialism which researchers aim to approximate in relevant studies. Out of the articles selected, seven discussed the concept of materialism as a financial factor that may influence relationships (Carroll et al., 2011; Dean et al., 2007; Leavitt et al., 2019; LeBaron et al., 2017, 2018; Seol et al., 2021; Zhao et al., 2023).

Dean et al. (2007) and Seol et al. (2021) both observed a direct negative correlation between materialism and marital satisfaction. In addition, materialism indirectly affects marital satisfaction through perceived marital importance and marital centrality (LeBaron et al., 2017, 2018). Marital satisfaction is low when either of the partners are high in materialism and is lowest when both are high in materialism, while partners who are each low in materialism tend to be high in marital satisfaction (Carroll et al., 2011). These findings demonstrate a significant association between materialism and relationship satisfaction among a married couple population.

Leavitt et al. (2019) conducted a longitudinal study of heterosexual couples, looking at both goods materialism (accumulating goods) and image materialism (boosting self-image or status through material means) as they relate to relationship satisfaction and sexual satisfaction. Cohabiting couples who were unmarried were included in the study. The researchers noticed that materialism was related to relationship satisfaction overall; T-2 goods materialism for men was associated with their T-2 lower relationship satisfaction, which was then associated with lower T-3 relationship satisfaction in men and women (Leavitt et al., 2019). Therefore, the association between materialism and relationship wellbeing is an ongoing and evolving interaction, which may present negative outcomes in the future, rather than during the present.

These findings are consistent with research on individual wellbeing, as measured by happiness, which is significantly curtailed when an individual scores high on scales measuring materialism and compulsive buying (Allen, 2017). A person who is highly materialistic might engage in compulsive buying, which contributes to financial insecurity. Development of individual wellbeing is inherently desirable and is likely to impact an individual's experience of their romantic relationship. It would appear that materialism and compulsive buying are undesirable behaviors to achieve individual or relationship wellbeing (Allen, 2017; Cappetto & Tadros, 2017).

Additionally, Górnik-Durose (2020) showed mediating effects of neuroticism and grandiose narcissism on the association between materialism and lower relational quality. Not only do some personality traits like narcissism relate to negative relationship quality, but other traits like agreeableness and conscientiousness are related to romantic satisfaction and marital endurance (Gerlach et al., 2020; Górnik-Durose, 2020). This seems to indicate that personality could be a significant contributing factor to the association between materialism and relationship satisfaction. This suggests that materialism may not always be harmful to relationships if partners have certain character traits.

Supporting the possibility that materialism is not universally related to negative relationship quality, Zhao et al. (2023) did not find a significant relation between materialism and romantic relationship wellbeing, although the study did find significant relationships between materialism and family relationship quality, and materialism and community relationship quality. This is the only paper that did not find a negative correlation between materialism and relationship quality. Interestingly, Zhao et al. (2023) studied emerging adults, suggesting that materialism may not be a relevant predictor of relationship quality among this population. However, emerging adult couples will eventually transition out of that age range, meaning the association between materialism and relationship quality is still likely to impact emerging adults in the form of a delayed onset, as consistent with the findings of Leavitt et al. (2019).

When controlling for financial difficulties, the impact of materialist attitudes on relationship quality is considerably diminished (LeBaron et al., 2017). It appears that having fewer financial resources is a considerable factor leading to the association between materialism and relationship satisfaction. This suggests that materialism has a negative relational influence because it amplifies financial struggles.

Financial Management Behavior

Another identified group studied financial management and behaviors as they relate to relationships. Financial Management is the process of planning and controlling finances to increase wealth (Spuhlera & Dew, 2019). Financial behaviors are any actions taken with regards to personal or shared financial resources. Three articles identified financial management (Kerkmann et al., 2000; Spuhlera & Dew, 2019; Zimmerman & Roberts, 2012) and two identified financial behaviors (Britt & Grable, 2008; Wilmarth et al., 2021). One article identified a broader category of relationship maintenance behaviors, which may include financial components (Gabb et al., 2022).

Two of the articles supported the premise that when an individual perceives their partner's financial management or behavior as negative, the relationship suffers (Britt & Grable, 2008; Kerkmann et al., 2000). Britt & Grable (2008) viewed married and unmarried couples, while Kerkmann et al. (2000) viewed recently married couples who were students and were disproportionately young. The continuity of results across different population groups demonstrates promising accuracy.

Spuhlera and Dew (2019) observed that sound financial management for married or cohabiting individuals is related to increased happiness, a finding that is partially mediated by relationship satisfaction. Zimmerman and Roberts (2012) found a direct association between taking a financial management course and improved relationship quality for heterosexual married couples. These findings suggest that financial management can be promoted in couples, thereby strengthening relationship quality.

Communication and couple maintenance behaviors, potentially including financial behaviors, are associated with increased relationship quality (Gabb et al., 2022). Additionally, Wilmarth et al. (2021) found that positive financial behaviors were related to shared financial values in married or cohabiting young adult couples; shared values are a source of relationship satisfaction according to Archuleta et al (2013). Taken together, these studies indicate that positive financial behaviors are connected to positive relationship quality, while negative financial behaviors are connected to negative relationship quality. Monetary responsibility is one driver of relationship wellbeing.

Values

Values were demonstrated to be a factor that that may be related to relationship satisfaction and commitment in seven articles (Archuleta et al., 2013; Carroll et al., 2011; Koochel et al., 2020; LeBaron et al., 2017, 2018; Rea et al., 2020; Wilmarth et al., 2021). Both personal and financial values are associated with relationship satisfaction. Personal values involve relationship commitment, career-relationship balance, and a belief in marital centrality. Financial values include financial transparency and views about the meaning of money (Koochel et al., 2020).

Differing views about financial behavior may exact strain on a romantic relationship (Archuleta et al., 2013). Financial disagreements are more likely than other disagreements to indicate that the relationship will end in divorce (Dew et al., 2012). This suggests that financial value incongruence is associated with poor relationship quality. However, Carroll et al. (2011) indicates that materialistic attitudes reduce relationship satisfaction and personal well-being even when both spouses are united in their materialistic views. This finding demonstrates that financial value agreement could also be associated with poor relationship quality, perhaps due to an increase in compulsive buying and downstream financial strain for the couple.

According to LeBaron et al. (2017, 2018), the value of marriage, as perceived by a married couple, contributes to the association between materialism and relationship satisfaction. Similarly, Rea et al. (2020) looked at personal values with regards to a couple's commitment level and noted that valuing a career-relationship balance is associated with more commitment. This finding was for emerging adults in committed relationships, a population group that differs from most studies on this topic. Higher relationship commitment is known to be associated with increased relationship stability and wellbeing among heterosexual married couples (Ross et al., 2020). These personal values represent a critical theme for relationship wellbeing across differences in age and relationship status.

Archuleta et al. (2013) observed an association between financial satisfaction, shared values, and relationship satisfaction for couples. Valuing financial transparency may also benefit relational wellbeing because greater financial transparency is associated with higher marital satisfaction (Koochel et al., 2020). Wilmarth and colleagues (2021) studied financial values in couples by looking at how positive financial behaviors can increase shared values in a young couple relationship.

Financial Stress

The final theme identified from the reviewed literature was financial stress. Financial stress, or financial strain, is the difficulty associated with meeting economic needs. Financial strain is associated with increased perceptions of partner aggression, leading to poorer marital quality (Wheeler et al., 2019). Certain financial situations may result in less desirable behaviors and lower relationship wellbeing compared to other financial circumstances. It is possible that financial strain is not inherently problematic for couple relationships, but is an indicator of other problematic behavior tendencies. It is necessary to consider the effects of both financial stress and financial flourishing on couple relationships to establish a better model of relationship wellbeing. Three articles focused on financial stress as it relates to relationships (Ross et al., 2020; Zeamer & Etsy, 2021; Zimmerman & Roberts, 2012).

Ross et al. (2020) found that financial stress has a negative impact on marital quality and marital stability. This is consistent with a systemic understanding of relationship quality in general. It also appears that financial management courses can improve relationship quality for married couples (Zimmerman & Roberts, 2012), further indicating the link between financial stress and relationship quality. However, Zeamer and Etsy (2021) suggest that relationship quality among committed couples is related to couples choosing to have joint financial coaching, as opposed to those who choose individual financial coaching.

Summary

Materialism, financial management and behavior, values, and financial stress are related to relationship quality in some way, as supported by the reviewed research. High materialism, poor financial management, low commitment, financial value incongruence, and high financial stress are generally connected with lower relationship satisfaction or quality. Low materialism, sound financial management, high commitment, financial value congruence, and low perception of financial stress are all indicators for greater relationship satisfaction or quality.

Financial counselors or clinicians can recognize themes as they emerge to best facilitate the completion of client goals. Clinical professionals who seek to promote relationship quality can promote these individual themes in their clients to tackle the overarching goal of increasing relationship quality. The analyzed literature suggests that age and commitment level are important factors in determining how finances indicate relationship quality. Therefore, professionals and individuals alike should be careful to consider their own situations and those of their clients before encouraging certain behavior modifications or financial practices. A systemic recognition of the client's environment and unique traits should guide the application of the identified themes into clinical practice.

Limitations

The current design was limited to articles housed on SCOPUS, and contained articles from a relatively small variation of journals. Another database may have allowed for a wider breadth of sources from a wider variety of journals. This review focused on a small sample size of articles, just nineteen. This limited the amount of additional data that could be categorized into different themes. A greater sample size of articles could increase the number of identified themes, or provide more evidence for the establishment of those themes. The study also focused on a narrow set of keywords. More exploration of alternate keywords may find additional themes related to financial behavior and relationship quality.

Many of the articles analyzed contained information that was specific to heterosexual couples (Dean et al., 2007; Koochel et al., 2020; Leavitt et al., 2019; LeBaron et al., 2017; Ross et al., 2021; Seol et al., 2021; Zimmerman & Roberts, 2012). As nontraditional couple arrangements become more prevalent in society, it becomes increasingly more important to research the unique strengths and challenges they face. The findings presented in this review may not be generalizable to couples who do not adhere to the traditional heterosexual configuration.

Implications

The four identified themes contribute to the existing literature on relationship quality by providing a basis for future research. More knowledge is needed to support or reject the themes identified in this review. Those themes can be mapped onto existing theoretical frameworks or social models to elicit increased benefits for individuals looking to improve their relationships and for financial professionals to help improve their clients' relationships.

Couples with one or both partners who report high materialism can work together with a financial counselor to decrease materialism. Therapists can facilitate a budgeting workshop for the couple. Cognitive Behavioral Therapy can help the couple be mindful of their budget when making purchases. Building secure partner attachments may alleviate the negative impacts of materialism by increasing the perceived value of their partner. Couples may also look to improve commitment and marriage centrality as they relate to financial matters. This can benefit them by increasing their perceived value of the relationship compared to the value of their material possessions.

Increasing financial management behaviors is important for relationship quality (Spuhlera & Dew). More effective financial management programs can be implemented into clinical practices and made more accessible for individuals, especially programs that are designed for joint couple sessions. Couple financial counseling can be encouraged for couples who want to bolster their relationship quality through improved financial transparency or through a greater knowledge of sound financial behaviors.

These programs can also address financial stress for couples experiencing financial difficulties by teaching couples how to navigate joint financial accounts. Professionals can help couples access additional resources to partially alleviate their perceived financial stress. These may include government programs or nonprofit organizations. Developing short-term and long-term financial plans with clients can prepare clients for navigating a future with limited financial resources.

Developing shared financial values and goals may help boost relationship quality as well. To help couples express their financial values and goals, Cognitive Behavioral Therapy's values clarification intervention can help couples what is most important in their relationship personally and financially (Kirschenbaum, 2013). Couples can use the value clarification intervention to strengthen their shared financial values, promote financial transparency and financial trust, and develop a fitting career-relationship balance. They can determine which values are most important to pursue in the process of couples therapy.

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Table 1.

Information and relevant findings for each citation.

Citation	Framework	Purpose	Population	Sample #	Relevant Findings
Archuleta et al. (2013)	Gottman Theory	To identify factors associated with satisfaction with a newly proposed model	All couples	135	Relationship satisfaction is related to financial satisfaction, harsh start up, and shared goals and values
Britt & Grable (2008)	Social Exchange Theory	To explore the association between relationship satisfaction and personal, partner, and joint spending behaviors	310 married or remarried couples, 37 'significant other' couples	347	An individual's perceptions of their partner's spending behavior, but not personal or joint spending behavior, is associated with relationship satisfaction
Carroll et al. (2011)	N/A	To determine if the negative association of materialism and marital satisfaction is caused by value differences	Individuals and couples from the RELATE institute	1,734 married	Value incongruence is slightly related to materialism. Congruently non-materialist couples have the highest marital satisfaction and higher marital importance. Perceived financial problems increase with higher materialism.
Dean et al. (2007)	N/A	To determine the indirect impact of materialism on marital satisfaction via perceived financial issues and the direct impact on marital satisfaction	Couples in their first marriage	1200 - 600 couples	Materialism has a direct negative impact on marital satisfaction. Husbands' materialism has a small negative effect on their own marital satisfaction, but not their wives'. Wives' materialism had a stronger effect on them and their husbands. Wives' materialism indirectly affects marital satisfaction through perceived financial problems, while husbands' materialism slightly affects their own perceived financial problems. Higher

					perceived financial issues is related to lower marital satisfaction
Gabb et al. (2023)	Feminist New Materialisms	To provide a new conceptual framework for the study of family and couple relationships and to look at relationship quality in a modern context	Users of the *Paired* App	3717 app data, 745 surveys, 20 interviews	Users of the app experience improved relationship quality. Longer app usage is related to larger relationship quality increases. Relationship quality is improved by greater verbal and nonverbal communication and maintenance behaviors, including both personal and social behaviors.
Kerkmann et al. (2000)	Social Exchange Theory, Role Theory, and Symbolic Interaction Theory	To determine the interactions between financial management, financial problems, and marital satisfaction	Married students from Utah State University	218	Financial management perception and behaviors are related to marital satisfaction. Financial problems and perception of problems is related to marital satisfaction for the chief financial manager. Economic problems increased marital hostility
Koochel et al. (2020)	Social Exchange Theory	To develop a Financial Transparency Scale	Heterosexual couples in their first marriage	183	Three-factor (financial partnership, financial secrecy, financial trust and disclosure) Financial Transparency Scale consisting of 26 items
Leavitt et al. (2019)	Social Comparison Theory	To examine the longitudinal associations of materialism, sexual satisfaction and relational satisfaction.	Heterosexual couples	441 couples	T-2 materialism is negatively related to relational and sexual satisfaction in T-3 for women and men. Women with high materialism reported higher sexual satisfaction over time, while men with high materialism reported lower sexual satisfaction over time.
LeBaron et al. (2017)	Marital Paradigms Theory, Incompatibility	To explore actor and partner effects of marriage centrality as a mediating factor	Heterosexual married couples	1412- 706 couples	High materialism for wives predicted low marital satisfaction for them and their husbands. The materialism of both spouses

	of materialism and children model	between marital satisfaction and materialism.			impacted marital satisfaction indirectly through lower perceived marital importance.
LeBaron et al. (2018)	The Incompatibility of Materialism and Children Model, Marital Paradigms Theory	To extend the understanding of how materialism impacts marital relationships, including understanding marital importance as a factor	Individuals and couples from the RELATE institute	1310 married	Materialism is negatively associated with perceived marriage centrality. The importance of marriage partially mediates the association between marital satisfaction and materialism.
Rea et al. (2020)	Family Resource Management Theory - management dimension	To examine the impact of financial decisions and values on relationship commitment	Emerging adults in committed relationships	424	Having less financial resources is related to couples living apart. There is a positive association between student loan debt and cohabitation. There is a negative association between career stability values and married couples, but a positive association between career stability values and living apart.
Ross et al. (2021)	Family Stress and Coping Theory	To explore the impact of financial strain on marital quality and stability	Heterosexual, married couples	370 couples	As economic strain decreases, marital support and quality increases. Increases in work-family conflict are related to decreases in perceived marital support. As marital quality increases, marital stability also increases.
Seol et al. (2021)	Escape Theory of Materialism	To examine the actor and partner effects of wives' earnings as a mediating factor between marital satisfaction and materialism	South Korean couples with at least 1 child under the age of 18	301 couples	Spouses levels of materialism and marital satisfaction are correlated together. Husbands' levels of materialism are not related to marital satisfaction. Wives' earnings were not related with materialism or marital satisfaction.

Spuhlera & Dew (2019)	Maslow's hierarchy of needs	To examine if sound financial management behaviors are reported to satisfy participants' needs	Individuals	1014 - (550 married or cohabiting)	Sound financial management behavior is related to savings, investment, debt (negatively), and perceived economic pressure. Economic pressure is negatively related to happiness and relationship satisfaction.
Wilmarth et al. (2021)	Interdependence Theory	To investigate how to improve shared financial values in couples	Married or cohabiting young adults	162	Positive perceived financial behaviors promote further positive behaviors and a perception of shared financial goals, which is related to relationship satisfaction.
Zeamer & Estey (2021)	N/A	To find out if individuals in committed relationships prefer individual or couple-based financial coaching and why.	Couples in committed relationships	84	Couple-based financial coaching is preferred, especially for women. Higher relationship quality is related to choosing couples-based coaching. Younger participants were most likely to choose individual financial coaching.
Zhao et al. (2023)	Bronfenbrenner's Ecological Framework	To determine the relationship between materialism and relationship quality based on relation to self, others, and society.	Young adults (18-30)	190	Low self-esteem is related to high materialism. Anxious attachment is related to high materialism. Materialism is not associated with intimate relationship quality but is associated with family and community relationship quality.
Zimmerman & Roberts (2012)	Family Stress Theory	To investigate the effects of a financial management program on marital quality	Heterosexual married couples	32 couples	Attending a financial management course improves relationship quality. Qualitative data suggests the course improves relationship quality and communication.

Factors That Influence Emerging Adults' Engagement in Estate Planning: A Pilot Study

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Background

Estate planning is "the process of accumulation, management, conservation, and transfer of wealth considering legal, tax, and personal objectives" (Dalton et al., 2021, p. 637). Estate planning is essentially financial planning in anticipation of one's death, which can occur at any age. Despite this, estate planning is not a priority for many young adults (Herzberg & Schwartz, 2023). Young adults may be reluctant to engage in estate planning for a variety of reasons including a) a belief that estate planning only for the wealthy, b) a belief that estate planning is too expensive, c) a belief that estate planning takes too much time, d) a belief that estate planning is only for older adults, and e) they want to avoid thinking about their own death (Carter, 2023; Dalton et al., 2021; Herzberg & Schwartz, 2023; Lustbader, 2024). Furthermore, young adults often have other major financial decisions to make, such as choosing a career and buying a home (Herzberg & Schwartz, 2023). The timing of these major financial decisions is consistent with the period of emerging adulthood, which spans from about age 18 to 29 (Arnett, 2007; University of New Hampshire, 2024).

For individuals who are aged 18 and older, Herzberg and Schwartz (2023) recommend the development of the following estate planning documents: a) healthcare proxy, b) HIPPA authorization, c) durable financial power of attorney, and d) living will. For young adults with assets and/or dependent children, a will is recommended in addition to the aforementioned documents. A will is a document that details how an individual would like their assets distributed after death; it is also used to identify a guardian for minor children (Dalton et al., 2021). Establishment of a revocable living trust may also be prudent (Herzberg & Schwartz, 2023).

A few studies have identified factors associated with engagement in estate planning. Using a sample of 6,946 respondents from the 2012 Health and Retirement Study (HRS), Koss and Baker (2018) found age and being female were both positively associated with engagement in estate planning. Choi et al. (2019) had identical findings from a sample of 10,273 respondents from the 2012 HRS. Furthermore, Choi and Carr (2023) found marriage was positively associated with engagement in estate planning. Some research indicates that those who are diagnosed with a terminal illness, such as Alzheimer's Disease, are more likely to engage in estate planning (Choi et al., 2019).

Financial education was found to be positively associated with engagement in estate planning (Kim & Stebbins, 2021). Financial education is frequently offered by employers, Cooperative Extension, high schools, and universities. Twenty-five U.S. states require financial education before high school graduation (NexGen Personal Finance, 2024).

As younger adults are less likely than older adults to engage in estate planning despite its importance across the lifespan, the purpose of this study was to identify factors associated with engagement in estate planning among young adults, specifically emerging adults.

Methods

Research Question and Hypotheses

The research question for this study was, "What factors contribute to engagement in estate planning among emerging adults?" Consistent with the research question, the following hypotheses were tested in this study using *t*-tests, correlations, and a one-way ANOVA.

H_1: Engagement in estate planning among emerging adults will vary by demographic factors.

> H_{1a}: Female emerging adults will be more likely to engage in estate planning than male emerging adults.
>
> H_{1b}: There will be a positive association between age and engagement in estate planning among emerging adults.
>
> H_{1c}: Emerging adults who have taken a personal finance course will be more likely to engage in estate planning than emerging adults who have not taken a personal finance course.
>
> H_{1d}: Engagement in estate planning by emerging adults will vary by state of residence.

H_2: Personal attitudes about estate planning will influence emerging adults' engagement in estate planning.

> H_{2a}: Emerging adults who believe estate planning is important will be more likely to engage in estate planning than emerging adults who do not believe estate planning is important.
>
> H_{2b}: Emerging adults who believe estate planning is only for older adults will be less likely to engage in estate planning than emerging adults who do not believe estate planning is only for older adults.
>
> H_{2c}: Emerging adults who believe estate planning is only for people with children will be less likely to engage in estate planning than emerging adults who do not believe estate planning is only for people with children.
>
> H_{2d}: Emerging adults who believe estate planning is only for people with a lot of assets will be less likely to engage in estate planning than emerging adults who do not believe estate planning is only for people with a lot of assets.
>
> H_{2e}: Emerging adults who believe estate planning is only for married couples will be less likely to engage in estate planning than emerging adults who do not believe estate planning is only for married couples.
>
> H_{2f}: Emerging adults who believe estate planning takes too much time will be less likely to engage in estate planning than emerging adults who do not believe estate planning takes too much time.
>
> H_{2g}: Emerging adults who believe estate planning is only for people that are dying will be less likely to engage in estate planning than emerging adults who do not believe estate planning is only for people who are dying.

H_3: Knowledge about estate planning will be positively associated with engagement in estate planning by emerging adults.

Instrument

Data were collected using a 13-item online survey developed for the purpose of this study. The development of survey items was informed by available literature. Nine survey items were designed to elicit data about attitudes, knowledge, and engagement regarding estate planning and were measured on a five-point Likert scale. Four additional survey items were developed to elicit demographic data on age, gender, completion of a personal finance course, and state of residence. Response options for the age and state of residence items were open-ended; response options for the gender and completion of a personal finance course were categorical.

Sample Recruitment and Demographics

Upon receipt of IRB approval, information about the study was shared via the researchers' social media accounts. The inclusion criterion was being between the ages of 18 and 29. Forty-six individuals completed the survey from March-April 2024. Seven respondents indicated they were over age 29; their responses were removed prior to data analysis for an $n = 39$. Descriptive information about the sample is available in Table 1.

Table 1

Sample Demographics

Variable	Count (n)	Percentage (%)
Gender		
Male	12	30.8
Female	27	69.2
Taken Personal Finance Course		
Yes	14	35.9
No	24	61.5
Prefer not to respond	1	2.6
State Resided In		
South Dakota	17	43.6
Minnesota	16	41.0
Nebraska	2	5.1
Illinois	1	2.6
New York	1	2.6
Age		
M = 22.31 years	SD = 2.54 years	

Data Analysis

Descriptive statistics were computed for all survey items (Table 2). *T*-tests, correlations, and a one-way ANOVA were computed using SPSS 29 to test the hypotheses. 'Prefer not to respond' responses were treated as missing data. The following dependent variables and independent variables were employed in analyses:

Dependent Variable

Engagement in estate planning. This continuous variable, measured on a five-point Likert scale, reflects responses to a survey item that asked respondents to rate how much they had started the estate planning process. This dependent variable was used to test all hypotheses.

Independent Variables

Gender. This categorical variable reflects responses to a survey item that asked respondents to indicate if they were male or female. This variable was used to test H_{1a}.

Age. This continuous variable reflects responses to a survey item that asked respondents to indicate their age. This variable was used to test H_{1b}.

Personal finance course. This categorical variable reflects responses to a survey item that asked respondents to indicate if they had completed a personal finance course. This variable was used to test H_{1c}.

State of residence. This categorical variable reflects responses to a survey item that asked respondents to indicate their state of residence. "South Dakota" responses were coded as 1, "Minnesota" responses were coded as 2, and all other states were coded as 3. This variable was used to test H_{1d}.

Estate planning is important. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is important". This variable was used to test H_{2a}.

Estate planning is only for older adults. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is only for older people". This variable was used to test H_{2b}.

Estate planning is only for people with children. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is only for people with kids". This variable was used to test H_{2c}.

Estate planning is only for people with a lot of assets. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is only for people with a lot of assets". This variable was used to test H_{2d}.

Estate planning is only for married couples. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is only for married couples". This variable was used to test H_{2e}.

Estate planning takes too much time. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning takes too much time". This variable was used to test H_{2f}.

Estate planning is only for those who are dying. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "Estate planning is only for people that are dying". This variable was used to test H_{2g}.

Knowledge of estate planning. This continuous variable, measured on a five-point Likert scale, reflects respondents' level of agreement with the following survey item: "I understand what estate planning is". This variable was used to test H_3.

Table 2

Frequency Data for Survey Items

Item	Response	Count (n)	Percentage (%)
Estate planning is important.	Strongly agree	14	35.9
	Agree	19	48.7
	Somewhat agree	4	10.3
	Somewhat disagree	2	5.1
	Disagree	0	0
	Strongly disagree	0	0

I have started the estate planning process in some capacity.	Strongly agree	2	5.1
	Agree	4	10.3
	Somewhat agree	5	12.8
	Somewhat disagree	3	7.7
	Disagree	13	33.3
	Strongly disagree	12	30.8
I understand what estate planning is.	Strongly agree	5	12.8
	Agree	11	28.2
	Somewhat agree	10	25.6
	Somewhat disagree	6	15.4
	Disagree	3	7.7
	Strongly disagree	4	10.3
Estate planning is only for older people.	Strongly agree	0	0
	Agree	4	10.3
	Somewhat agree	1	2.6
	Somewhat disagree	8	20.5
	Disagree	20	51.3
	Strongly disagree	5	12.8
	Prefer not to respond	1	2.6
Estate planning is only for people with kids.	Strongly agree	2	5.1
	Agree	3	7.7
	Somewhat agree	1	2.6
	Somewhat disagree	5	12.8
	Disagree	14	35.9
	Strongly disagree	13	33.3
	Prefer not to respond	1	2.6
Estate planning is only for people with a lot of assets.	Strongly agree	2	5.1
	Agree	3	7.7
	Somewhat agree	7	17.9
	Somewhat disagree	5	12.8
	Disagree	16	41.0

	Strongly disagree	6	15.4
Estate planning is only for married couples.	Strongly agree	1	2.6
	Agree	1	2.6
	Somewhat agree	1	2.6
	Somewhat disagree	6	15.4
	Disagree	23	59.0
	Strongly disagree	7	17.9
Estate planning takes too much time.	Strongly agree	0	0
	Agree	2	5.1
	Somewhat agree	7	17.9
	Somewhat disagree	8	20.5
	Disagree	17	43.6
	Strongly disagree	4	10.3
	Prefer not to respond	1	2.6
Estate planning is only for people that are dying.	Strongly agree	0	0
	Agree	0	0
	Somewhat agree	2	5.1
	Somewhat disagree	7	17.9
	Disagree	21	53.8
	Strongly disagree	8	20.5
	Prefer not to respond	1	2.6

Results

To test H_{1a}, an independent-samples *t*-test was calculated comparing gender and engagement in estate planning. No significant data were found ($t(37) = -.563$, $p = .578$). H_{1a} was not supported.

To test H_{1b}, a Pearson correlation test was calculated examining the relationship between age and engagement in estate planning. A weak correlation that was not significant was found ($r = -.244$, $p = .134$). Age was not related to engagement in estate planning. H_{1b} was not supported.

To test H_{1c}, an independent-samples *t*-test was calculated comparing having taken a personal finance course and engagement in estate planning. No significant relationship was found ($t(36) = .060$, $p = .953$). H_{1c} was not supported.

To test H_{1d}, state of residence and engagement in estate planning were compared using a one-way ANOVA. No significant difference was found ($F(2, 35) = .564$, $p = .544$). H_{1d} was not supported.

To test H_{2a}, a Pearson correlation coefficient was calculated for the relationship between believing estate planning is important and engagement in estate planning. A positive correlation was found ($r = .433$, $p = .006$), indicating a significant relationship between the two variables. H_{2a} was supported. Respondents who believe estate planning is important were more likely to engage in estate planning.

To test H_{2b}, a Pearson correlation was calculated examining the relationship between believing estate planning is only for older adults and engagement in estate planning. A weak correlation that was not significant was found ($r = -.204$, $p = .212$). Believing estate planning is only for older adults was not related to engagement in estate planning; therefore, H_{2b} was not supported.

To test H_{2c}, a Pearson correlation was calculated examining the relationship between believing estate planning is only for people with children and engagement in estate planning. A weak correlation that was not significant was found ($r = -.069$, $p = .675$). Believing estate planning is only for people with children was not related to engagement in estate planning; therefore, H_{2c} was not supported.

To test H_{2d}, a Pearson correlation was calculated examining the relationship between believing estate planning is only for people with a lot of assts and engagement in estate planning. A weak correlation that was not significant was found ($r = -.074$, $p = .653$). Believing estate planning is only for people with a lot of assets was not related to engagement in estate planning; therefore, H_{2d} was not supported.

To test H_{2e}, a Pearson correlation was calculated examining the relationship between believing estate planning is only for married people and engagement in estate planning. A weak correlation that was not significant was found ($r = .094$, $p = .571$). Believing estate planning is only for married people was not related to engagement in estate planning; therefore, H_{2e} was not supported.

To test H_{2f}, a Pearson correlation was calculated examining the relationship between believing estate planning takes too much time and engagement in estate planning. A weak correlation that was not significant was found ($r = -.132$, $p = .423$). Believing estate planning takes too much time was not related to engagement in estate planning; therefore, H_{2f} was not significant.

To test H_{2g}, a Pearson correlation was calculated examining the relationship between believing estate planning is only for people that are dying and engagement in estate planning. A weak correlation that was not significant was found (*r* = -.143, *p* = .212). Believing estate planning is only for people that are dying was not related to engagement in estate planning; therefore, H_{2h} was not supported.

To test H_3, a Pearson correlation coefficient was calculated for the relationship between knowledge of estate planning and engagement in estate planning. A moderate positive correlation was found (r = .381, p = .017), indicating a significant relationship between the two variables. Participants who were knowledgeable about estate planning were more likely to engage in estate planning; therefore, H_3 was supported.

Discussion

Being female, older, completing a personal finance course, and state of residence were not associated with engagement in estate planning. This is contrary to Koss and Baker (2018) and Choi et al. (2019), who found being female and older were positively associated with engagement in estate planning. Knowledge of estate planning was positively associated with engaging in estate planning activities, consistent with Kim and Stebbins (2021).

A belief moderately associated with young adults' engagement in estate planning in this study included believing estate planning is important. Believing that estate planning is only for the wealthy and only for older adults were found not to be associated with emerging adults' engagement in estate planning in this study, which is contrary to Carter (2023) and Dalton et al. (2021).

Limitations and Directions for Future Research

The findings of this pilot study should be interpreted in respect to its limitations. The sample was majority females from South Dakota and Minnesota who did not take a personal finance course. With a sample size of *n* >30, a basic tenet of the Central Limit Theorem is "the sampling distribution will be a normal curve, regardless of whether the actual variable is normally distributed" (Whittier et al., 2020, p. 295). While the sample size for this study (*n* = 39) was adequate for the types of statistical analyses conducted, regression analyses were not possible as each predictor variable would need an *n* = 50 (Bujang et al., 2018).

To obtain a larger, more diverse sample, future research using this survey should consider disseminating study recruitment information through Cooperative Extension, specifically the Financial Security for All Community of Practice (United States Department of Agriculture—National Institute of Food and Agriculture, 2024). With a larger sample, an exploratory factor analysis (EFA) could be used "to identify the common factors that explain the order and structure among measured variables" (Watkins, 2018, p. 220). An EFA would be useful in identifying underlying factors that explain the structure among the belief items on the survey to enhance the validity of study findings. A minimum sample size of *n* = 50 would be necessary to conduct an EFA (de Winter et al., 2018).

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Conflict Resolution Skills as a Moderator of Financial Infidelity

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Abstract

The most recent Harris Poll revealed that for American couples with combined finances, approximately 43% had committed financial infidelity at some point (NEFE, 2021). In a 2018 study, 53% of participants reported to have committed financial infidelity (Jeanfreau, et al., 2018). These numbers illustrate not only a growing awareness of the issue of financial infidelity, but also the staggering number of couples affected by it. Financial infidelity is any type of financial deceit toward a romantic partner (Canale et al., 2015). Research has generally documented deleterious effects of financial infidelity upon couple relationships. Klontz et al. (2023) found that financial infidelity as a coupleship money pattern has a significant negative effect upon relationship stability. Jeanfreau et al. (2018) asserted that people who experienced financial infidelity had lower life and marital satisfaction than people who did not. The 2021 Harris Poll found that 16% of respondents reported divorce and 13% reported separation following experiences of financial infidelity (NEFE, 2021). However, in that same report of outcomes from financial infidelity experiences in the 2021 Harris Poll, there was a subset of participants who reported that their relationship improved following the experience. Nineteen percent of respondents said that they grew closer as a couple and 16% said that the experience caused them to communicate more proactively (NEFE, 2021). Investigations of such positive outcomes after experiences of financial infidelity have not been reported within the current literature and deserve greater scrutiny as to how or why they occur.

The present study attempts to move beyond the traditional discussion of financial infidelity effects. Given the almost opposing self-reported results in the 2021 Harris Poll, this study postulates that it is not just the episode of financial infidelity itself that causes relationship dissatisfaction and instability, but rather the process by which a couple works through an experience of financial infidelity (dependent upon the experience's severity, patterns of behavior, financial consequences, and motivations). This focus on couple processing has a theoretical foundation in Couples and Finance Theory. The structure of the Couples and Finance Theory includes two subsystems - the couple relationship and the financial process - that operate interdependently within a broader environment (which includes culture, the economy, religion, etc.) and have circular effects (Archuleta & Burr, 2015). Within the couple relationship subsystem, each partner's attributes (both personal and financial) influence the couple dynamic and relationship satisfaction while financial factors, money management, and resource allocation within the financial process subsystem influence financial satisfaction (Archuleta & Burr, 2015). A couple's decisions and interactions within one subsystem affect the other one as well, thereby linking the two (Archuleta & Burr, 2015). The present study asserts that conflict resolution skills can positively affect the couple relationship with positive spillover effects into the financial process, thereby increasing overall relationship satisfaction.

Using dyadic data from a recent survey of U.S. couples in the Couple Relationships and Transition Experiences (CREATE) dataset, the present study examines how a married couple's quality of conflict resolution skills is associated with the connection between financial infidelity and marital relationship satisfaction. The present study's research design is cross-sectional using data for CREATE wave six that was collected between April and December of 2022 (Yorgason et al., 2023). Requirements for participation in the survey were that the respondents be married, ages 18 - 36, living in the US, and the current relationship be a first marriage for at least one of the partners (Yorgason et al., 2023). The dependent measure within the analysis is relationship satisfaction. Explanatory variables of interest include episodes of financial infidelity, conflict resolution skill level, an interaction between financial infidelity and conflict resolution, marital power, commitment, sexual infidelity, and demographics

that include race, religion, highest education achieved, current work situation, and the natural log of household income.

Statistical analysis of the data includes chi-square tests of independence, ordered probit regressions, and seemingly unrelated regression. The analysis indicates mixed results for the present study's hypotheses. Financial infidelity is not significantly associated with relationship satisfaction for either partner within the regressions, which indicates that the model does not provide evidence that couples who experienced financial infidelity have lower relationship satisfaction than couples who did not. However, the analysis does provide some evidence that couples who experience financial infidelity have higher relationship satisfaction if their scores for conflict resolution skill are higher. Results also demonstrate a significant association of conflict resolution, marital power, and marital commitment with relationship satisfaction. Not only do these results provide support for coupleship interdependent processing, as outlined in Couples and Finance Theory, but they also hint at the need for future research.

Instead of documenting only negative effects from episodes of financial infidelity, the present study provides hope for both a new research path and practitioners' work with couple clients who experience financial infidelity. Couples engage in acts of financial infidelity for a variety of reasons and the corresponding effect upon the marriage is dependent on many relationship factors. The present study discusses how practitioners can adapt interventions from Emotionally Focused Therapy for Couples (EFT) to help client couples make financial decisions. In EFT the focus is on helping couple clients to improve relationship functioning via improved emotional connectivity that is based on secure attachment (Wiebe & Johnson, 2016). The present study provides examples of EFT intervention adaptation that allows a better understanding of client couples relationship dynamics. As practitioners better understand their clients' couple dynamics, they can help clients learn how to appropriately discuss financial disagreements, thereby improving conflict resolution skills. Such improvements in client conflict resolution coupled with practitioner-guided client collaboration on financial decisions can provide clients with new skills to reduce or work through episodes of financial infidelity. In this way, practitioners can help clients to more successfully navigate complex experiences of financial infidelity.

Keywords: financial infidelity, conflict resolution, relationship satisfaction, Couples and Finance Theory

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A Review of State FAFSA Graduation Requirement Policies and the Efficacy of Financial Education and Counseling

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Background

The Free Application for Federal Student Aid or "FAFSA", as it is normally referred, is a free form that allows students to complete to be considered for various forms of financial aid for higher education, including federal grants, work study, and loans. Completing the FAFSA is especially important for students of low socio-economic status (SES) who will qualify for greater financial support due to a higher economic need. The recognition of this importance has led to national, state, and local initiatives to improve FAFSA completion rates which lead to higher rates of higher education attendance and completion (National Fafsa completion rates, 2024). In 2018 the state of Louisiana became the first state to mandate the completion of the Free Application for Federal Student Aid, requiring students to complete the form before graduating from high school. Officials in Louisiana were specifically concerned with connecting students of low SES with the federal aid they were qualified for. The new policy included funding to support community level grants to allow organizations to work one on one with students and parents at school and at home to complete the complex form. In one year the FAFSA completion rate in Louisiana rose 25% to 78.7% of total eligible students and became the leading state in the nation for FAFSA completion. This encouraged bordering Texas to pass a similar law that took effect for the 2021-2022 school year, requiring completion of the FAFSA to graduate (Kreighbaum, 2019). The purpose of these policy changes was to increase completion rates of the FAFSA which have been low across the country, and especially in the South. While these policies were enacted with positive intentions, Data made available by the Department of Education (DOE, 2024) has shown issues with the efficacy of the Texas law implemented in 2021.

Purpose and Research Questions

The purpose of this research is to review the FAFSA completion data in Texas from 2020 to 2024 utilizing data collected by the DOE and determine what impacts if any occurred because of the new policy. The research questions for this paper are 1) What were the outcomes of the Texas policy that attempted to increase FAFSA completion rates in Texas? 2) What are the factors to the success or failure of mandatory FAFSA completion policies?

Methodology

The data used to answer the questions above was the Department of Education (DOE, 2024) app data by state data set (U.S. Department of Education). This is the published data by the DOE of the total number of applications that are received by quarter from every U.S. sate and territory. The total number of completed applications and proportionate increases in the states of Louisiana and Texas between 2020 and 2024 were compared. The specific variables utilized were state and quarterly total of applications received (dependent & independent) for all quarters during the selected period.

Results

For research question 1 it was determined that between the final quarter of the 2020-2021 period and the final quarter of the 2022-2023 period the state of Louisiana increased the total number of completed applications by

10,333, a 3.66% increase in applications. Meanwhile, during the same time Texas applications rose by 13,592, a net gain of only 0.84% in the two years following the implementation of the new graduation requirement. Considering diminished returns following the 25% increase of Louisiana's FAFSA completion in 2019-2020 and the implementation of the Texas graduation requirement for the 2021-2022 year it was reasonable to assume that Texas should have far exceeded FAFSA completion growth when compared to Louisiana, but Texas fell short of Louisiana's application growth by 2.82%. Concerning question 2 the application completion rates halfway through cycles 2021-2022 through 2023-2024 showed that Texas had grown application rates faster than Louisiana with Texas growing at 5.3% compared to Louisiana's 4.28%. This data suggests that Texas gains a greater proportion of completed application growth early in the application cycle, while Louisiana gains a greater proportion of completed application growth later in the cycle. This is significant as students of low socio-economic status are more likely to complete the FAFSA later in the cycle and cite lack of information about the FAFSA or not knowing how to complete the FAFSA as reasons for not filing (Institute of Education Sciences, 2018). This supports the efficacy of the state of Louisiana's funding towards counseling programs to focus on improving FAFSA completion, especially for low SES students. Based on the limited data these graduation requirement policies can be successful, given they are paired with effective financial education and counseling services.

Conclusion

These results support the argument in the academic and financial counseling fields that low-cost targeted interventions, especially for low SES students, can have large impacts on the completion rates of the FAFSA (Page, L., Castleman, B., & Meyer, K., 2020) and subsequently improve the academic success and economic futures of college students (Novak, H., & McKinney, L., 2011) Further research is needed to determine the impacts of policies in both states comparing SES and mixed methods using qualitative data from policy makers, parents, students and counselors would be valuable.

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Factors Affecting Rural Household Income Satisfaction in China

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Abstract

Using data from official websites, questionnaires, and interviews, this paper examines the factors that influence rural residents' satisfaction with their income. This study was conducted in two distinct locations within Hunan Province, China: the town of Chunhua, situated within Changsha County, and the town of Qvyang, located within Jingzhou Miao and Dong Autonomous County. The findings indicate that Individuals with higher levels of education tend to demonstrate higher levels of satisfaction with their income. Furthermore, the level of attention paid by individuals to economic and financial information has a direct and positive effect on their satisfaction with their income. The government and policymakers should prioritize increasing financial awareness among rural residents. Therefore, it is important to provide rural residents with more knowledge and information about the country's economy, consumption, and financial affairs and create an environment more conducive to accessing useful information. Meanwhile, local governments have the potential to provide more precise and tailored educational resources to rural residents, particularly in less developed regions.

Keywords: education, financial information, income satisfaction, ordered logit regression, rural areas

Introduction

Under the optimization of the rural consumption environment, rural areas continue stimulating economic growth, gradually becoming a new pole of social consumption. The increased popularity of consumer finance has brought about great changes in the consumption patterns of rural residents, leading to the emergence of new types of consumption, such as cloud shopping, cloud entertainment, and cloud education. The main changes in consumption patterns are the shift from universal to personalized, practical to experiential, survival to value consumption, one-way purchase to interactive consumption, and offline to online consumption. As a consequence of enhanced individual awareness of economic occurrences and the social environment, the consumption patterns of rural residents have undergone a transformation which also led to an increase in the level of rural residents' happiness and a prolonged period of societal stability and security.

However, affected by the international situation and the general environment, China's current policy is to stimulate consumption. To some extent, this paper examines the factors affecting villagers' income that can help rural residents improve their level of satisfaction with their income, increase their disposable income, stimulate consumption, and realize the economy's domestic and international double-cycle. This will better meet the resident's personal needs and quality of life pursuits.

The United States is a nation with distinct socioeconomic characteristics that differentiate it from China. There are more people living from paycheck to paycheck in the United States, so the satisfaction of income under the same income conditions is different. Furthermore, consumption patterns diverge. It seems that the United States has a lower savings rate and a greater propensity for borrowing and consumption. However, there is a growing trend of parallel consumption patterns between China and the United States, particularly among Chinese youth, who are also resorting to greater borrowing and other forms of overspending. In addition, there are differences between rural and urban areas in the U.S. and China. In China, consumption habits and income patterns are differentiated between rural and urban areas, but there is less variation within villages. In the US, there may be more intra-urban class differences, as well as racial and gender differences. Hence, based on the Chinese situation, this paper seeks to the relationship between educational attainment, propensity to collect information, and income satisfaction. This series of relationships is not only applicable to China in the midst of change but also can explore the factors that influence household income satisfaction in the United States. Although they are distinct entities, they are also analogous and will continue to exhibit an increasing degree of commonality in the future. Consequently, the study is generalizable and possesses external validity.

Angrist and Krueger (1990) argue that an additional year of schooling can increase earnings. It can be inferred that individuals who pursue further education for a longer time are more likely to enhance their personal income. Currently, more literature focuses on the correlation between income satisfaction and relative income. The prevailing view is that an individual's income only increases their utility if their personal status rank also increases. (Boyce et al., 2010). The slope of the value function is contingent upon an individual's personality, social beliefs, and the extent to which they prioritize income (Leites & Ramos, 2022). It is enlightened that many personal and social factors influence individuals' judgments and subjective experiences.

In particular, individuals' subjective well-being is more closely tied to relative poverty levels than to absolute income levels (D'Ambrosio, C & Frick, J. R. 2007). However, research by Quispe-Torreblanca, E. G et al (2021) demonstrates that the positive effect of a 10% increase in income on life satisfaction is more than twice as large in a country with low-income inequality as it is in a country with high-income inequality. Income inequality may influence people’s preferences, such that in unequal countries people’s life satisfaction is determined more strongly by their income. Since this paper explores and compares two townships with different levels of development, there is a discrepancy in income levels between them. However, there is hardly a large income disparity in each town. Consequently, people's life satisfaction in this place is contingent upon individual income and the positive impact of increased income on life satisfaction is greater. Furthermore, personal satisfaction with life reflects personal satisfaction with income. Thus, this paper proposes Hypothesis 1: the education level of rural residents has a significant effect on the personal income satisfaction of local residents.

It has been shown through research that financial attention affects investment decisions and thus property income on the one hand, but also directly affects the utility of the investor on the other hand (aversion or preference for the information itself affects the utility of that individual, i.e., the hedonic impact (Sicherman, N et al 2016). Attention is positively related to investment performance, at both the portfolio return level and the individual trades level. (Gargano, A & Rossi, A. G. 2018). Existing literature focuses mostly on professional investors and does not understand the relationship between financial attention and capital income and utility from the perspective of the average household.

This paper will examine the impact of attention to economic and financial information and income satisfaction at the household level. Leyshon and Thrift argued that socially disadvantaged groups are excluded from financial institutions and lack access to financial services due to their below-average social status, resulting in economic, living, physical, or household poverty (Leyshon, A & Thrift, N.J. 1995). Panigyrakis et al. (2002) stated that this phenomenon is prevalent in low-income and economically underdeveloped remote areas, particularly in rural China (Wang et al., 2013). The field research area of this paper is not a developed, provincial capital city in China; rather, it is a relatively underdeveloped rural area. As a result, people in this area are generally not exposed to diverse financial services.

Financial development can provide economic opportunities for rural residents by making financial services more accessible and increasing their incomes. rural residents by making financial services more accessible and increasing their incomes (Banerjee & Newman, 1993). Zhang and Yin (2016) demonstrated that improving household financial literacy can effectively mitigate imbalances in household access to financial services based on data from the 2013 China Household Financial Survey (CHFS). However, most of their studies used secondary data rather than primary data. And few existing studies discuss the heterogeneity between developed and less developed regions. Accordingly, this study conducts a survey in a developed county and a less developed county to investigate the factors affecting the income level and satisfaction of residents and proposes Hypothesis 2: Rural residents' attention to economic and financial information has a significant effect on the personal income satisfaction of local residents.

Since there is a certain difference in the level of economic development between the two villages studied in this paper. Their social infrastructure, education related to grassroots organizations, lifestyles, and behaviors are different too. Based on this, we put forth Hypothesis 3: the level of economic development has a significant effect on the personal income satisfaction of local residents. This hypothesis aims to elucidate the impact of the observed differences between the locations on residents' income satisfaction.

Methodology

The objective of this paper is to explore the factors affecting the household income satisfaction of rural residents. The sample size is the number of surveyed households, and the household size of a unit in the countryside is usually four to six persons. The participants of the survey and research are school students and instructors. Questionnaires were distributed in both developed and underdeveloped villages in the central region of China. The sample was selected by the township government and the village committee in each village according to the income status of local rural residents by choosing high, middle, and low-income farming households, each accounting for 1/3 of the sample. During the fieldwork, we found that the majority of the interviewees were of an advanced age, especially in the underdeveloped area of Qvyang Township, where most of the rural residents are empty nesters. Meanwhile, the proportion of women is relatively high, which may be attributed to the fact that some of the prime-aged men often work outside the home. This study is based on a comparative analysis of survey data from 150 rural households in two villages in Chunhua Town, Changsha County, Changsha City, Hunan Province in central China (which are more typical of villages in peri-urban and developed areas) and 150 rural households in two villages in Qvyang Town, Jingzhou Miao and Dong Autonomous County, Huaihua City, Hunan Province (which are more typical of villages in remote and underdeveloped areas), to reveal the effects of educational level and regional economic status on household income satisfaction and financial information attention. Through such an analysis, a more comprehensive understanding of the factors affecting rural residents' consumption attitudes and behaviors can be achieved, which will help villagers increase their income and enhance their sense of well-being.

Model Setting

Since the household income satisfaction variable is an ordered categorical variable, that is, "very satisfied", "satisfied", "average", "and dissatisfied" and the corresponding values are 4, 3, 2, 1, 0, respectively, the use of the linear model will have major shortcomings, mainly in the disturbance term does not obey the normal distribution, there is heteroskedasticity, and according to the linear regression model of the predicted value can be greater than four or less than zero. The situation. At the same time, when the multiple-choice model is used, the order of the explanatory variables is ignored. Therefore, the ordered logistic model is used in this paper. The ordered logistic model can be expressed as follows:

$$y^* = x'\beta + \varepsilon \tag{1}$$

where y^* is an unobservable variable and its observations are 0, 1...J. The specific selection rule is as follows:

$$y = \begin{cases} 0, & y^* \le r_0 \\ 1, & r_0 < y^* \le r_1 \\ 2, & r_1 < y^* \le r_2 \\ & \cdots \\ J, & r_{J-1} < y^* \end{cases} \tag{2}$$

where $r_0, r_1 \cdots r_{J-1}$ is the tangent point, we have

$$\mathrm{P}(y=0 \mid x) = \mathrm{P}(y^* \le r_0 \mid x) = \mathrm{P}(\varepsilon \le r_0 - x'\beta \mid x) \tag{3}$$

$$\mathrm{P}(y=1 \mid x) = \mathrm{P}(0 < y^* \le r_1 \mid x) = \mathrm{P}(\varepsilon \le r_1 - x'\beta \mid x) - \mathrm{P}(\varepsilon \le r_0 - x'\beta \mid x) \tag{4}$$

…………

$$\mathrm{P}(y=J \mid x) = 1 - \mathrm{P}(\varepsilon \le r_{J-1} - x'\beta \mid x) \tag{5}$$

When the ordered logistic function is chosen for the probability distribution function, the model is an ordered logistic model. Also for robustness considerations, the ordered probit model is used for estimation in this paper.

Table 1

Description of variables

Options	Number of people		Proportion (%)	
	Developed area--Chunhua Township, Changsha County	Underdeveloped area--Qvyang Township, Jingzhou County	Developed area--Chunhua Township, Changsha County	Underdeveloped area--Qvyang Township, Jingzhou County
1-under 10,000 RMB	6	11	4.14%	7.75%
2-20,000-30,000 RMB	6	48	4.14%	33.80%
3-30000-50000RMB	17	64	11.72%	45.07%
4-50,000-100,000RMB	29	16	20.00%	11.27%
5-100000-200000RMB	64	3	44.14%	2.11%
6-200000RMB and above	23	0	15.86%	0.00%
1-Never went to school	0	0	0.00%	0.00%
2-Elementary school	0	51	0.00%	35.92%
3-Middle school	40	45	27.59%	31.69%
4-High School	35	0	24.14%	0.00%
5-Secondary/vocational school	12	6	8.28%	4.23%
6-College	35	17	24.14%	11.97%
7-Bachelor's Degree	23	23	15.86%	16.20%
ing or running a business outside t	58	50	40.00%	35.21%
2-Farming at home	17	67	11.72%	47.18%
3-Working in the countryside	41	6	28.28%	4.23%
4-Working in the countryside	23	19	15.86%	13.38%
5-Rural business	6	4	4.14%	2.82%
6-Starting a rural business	0	6	0.00%	4.23%
1 - Yes	6	6	4.14%	4.23%
0 - No	139	136	95.86%	95.77%
1-0-500 RMB	23	18	15.86%	12.68%
2-500-1000RMB	13	28	8.97%	19.72%
3-1000-1500RMB	42	34	28.97%	23.94%
4-1500-3000RMB	49	45	33.79%	31.69%
5-3000-5000RMB	12	17	8.28%	11.97%
6-5000RMB and above	6	0	4.14%	0.00%
1-0-500 RMB	54	79	37.24%	55.63%
2-500-1000RMB	42	39	28.97%	27.46%
3-1000-1500RMB	29	18	20.00%	12.68%
4-1500-3000RMB	11	6	7.59%	4.23%
5-3000-5000RMB	3	0	2.07%	0.00%
6-5000RMB and above	6	0	4.14%	0.00%
1-0-500 RMB	72	86	49.66%	60.56%
2-500-1000RMB	29	22	20.00%	15.49%
3-1000-1500RMB	30	11	20.69%	7.75%
4-1500-3000RMB	5	12	3.45%	8.45%
5-3000-5000RMB	1	11	0.69%	7.75%
6-5000RMB and above	8	0	5.52%	0.00%

3 - Very	0	0	0.00%	0.00%
2-General	12	64	8.28%	45.07%
1-Rarely	86	56	59.31%	39.44%
0-Never	35	22	24.14%	15.49%
1 - Yes	42	40	28.97%	2.00%
0 - No	103	102	71.03%	71.83%
4-Very Satisfied	41	23	28.28%	16.20%
3-Satisfactory	63	96	43.45%	67.61%
2-Average	29	18	20.00%	12.68%
1-Dissatisfied	12	5	8.28%	3.52%
0-Very dissatisfied	0	0	0.00%	0.00%
4-Very Satisfied	74	28	51.03%	19.72%
3-Satisfactory	75	97	51.72%	68.31%
2-Average	6	11	4.14%	7.75%
1-Dissatisfied	0	6	0.00%	4.23%
0-Very dissatisfied	0	0	0.00%	0.00%
4-Very Satisfied	57	29	39.31%	20.42%
3-Satisfactory	76	35	52.41%	24.65%
2-Average	12	73	8.28%	51.41%
1-Dissatisfied	0	5	0.00%	3.52%
0-Very dissatisfied	0	0	0.00%	0.00%
4-Very Satisfied	18	5	12.41%	3.52%
3-Satisfactory	39	13	26.90%	9.15%
2-Average	82	61	56.55%	42.96%
1-Dissatisfied	6	63	4.14%	44.37%
0-Very dissatisfied	0	0	0.00%	0.00%

Hypotheses

Hypothesis 1: The education level of rural residents has a significant effect on the personal income satisfaction of local residents.

Hypothesis 2: The attention of rural residents to economic and financial information has a significant effect on the

personal income satisfaction of local residents.

Hypothesis 3: The degree of economic development has a significant effect on local residents' personal income satisfaction.

Three villages from each category (i.e., developed and underdeveloped) were included separately in this study, and using Ordered Logistic model, Ordered Probit model, and Stata software were used to analyze the questionnaire data.

Empirical Results

In Table 2, this study presents descriptive statistics for each variable, including the number of observations, mean, standard deviation, and minimum and maximum values.

Table 2

The results of the statistical description

Variable	Obs	Mean	Std. Dev.	Min	Max
Family Income Satisfaction	287	2.101045	0.8570352	1	4
Attention to economic and financial information in	287	1.487805	0.7565733	0	3

daily life					
Whether your family has invested in projects	287	0.285714	0.452543	0	1
Main Sources of Household Income	287	2.303136	1.285513	1	6
Average monthly food expenses	287	3.163763	1.270019	1	6
Average monthly spending on utilities and fuel	287	1.933798	1.137016	1	6
Satisfaction with current rural consumer protection efforts	287	2.968641	0.816606	1	4
Satisfaction with the rural cultural infrastructure for cultural consumption	287	2.940767	0.7888937	1	4

Table 3 shows the correlation coefficients of seven important variables obtained from the questionnaire. The correlation coefficients show that there is a strong correlation between the three variables of attention to economic and financial information in daily life, education level of family members, and satisfaction with family income. Therefore, we need to clarify the relationship between these three variables.

Table 3

The results of the correlation analysis

	With or without Internet borrowing	Annual household income	Educational attainment of family members	Average monthly food expenses	Average monthly spending on utilities and fuel	Attention to economic and financial information in daily life
Annual household income	0.142**					
Educational attainment of family members	0.146**	0.460***				
Average monthly food expenses	-0.027	0.481***	0.269***			
Average monthly spending on utilities and fuel	-0.065	0.492***	0.162***	0.579***		
Attention to economic and financial information in daily life	0.142**	-0.003	0.356***	-0.520***	-0.405***	
Family Income Satisfaction	-0.025	0.173***	0.509***	-0.356***	-0.248***	0.630***

In Figure 1, we can see the proportion of different people with various levels of education in two townships. It is clear that people in Chunhua Township have higher education degrees than Qvyang Township because more people have senior high school or higher credentials in Chunhua Township. Knowing this information can help us to understand the data more deeply and accurately.

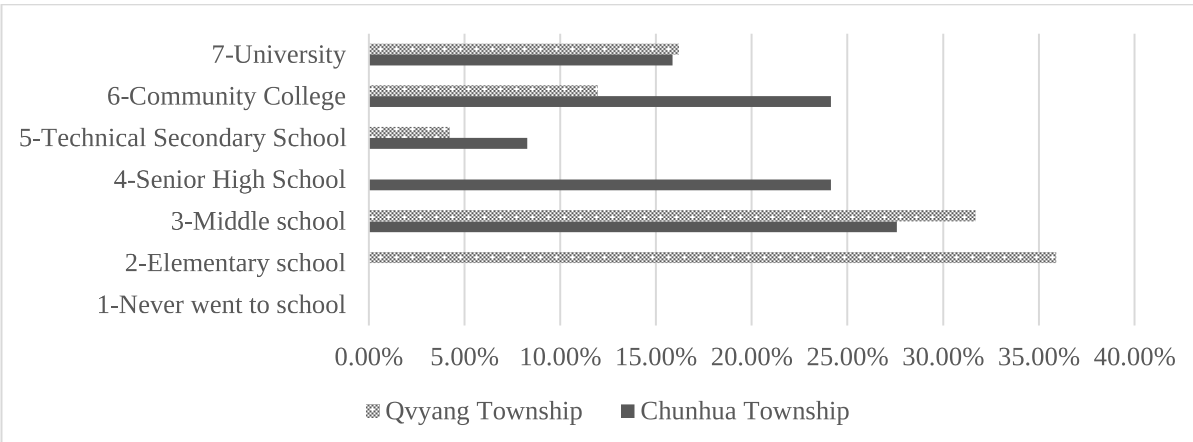


Figure 1

The education level of the people in both places

In the data of Chunghwa Township (Figure 2), residents with middle school education rarely pay attention to economic and financial information, and their satisfaction with their income level is not high. Then, the residents with technical secondary schools and community colleges gradually began to pay attention to economic and financial information. They are not significantly dissatisfied with their income and are at an average level. As people's education level increases, especially those with community college and university or higher education, they tend to pay more attention to economic and financial information. At the same time, their satisfaction with personal income also increases significantly. There is a strong positive correlation between educational attainment and attention to financial information: Individuals with higher educational attainment pay more attention to economic and financial information. As a matter of common sense, individuals with higher levels of education generally have access to a wider range of disciplines and are more likely to recognize the importance of economic and financial knowledge in improving their quality of life. As a result, they tend to be more proactive in seeking and acquiring relevant knowledge.

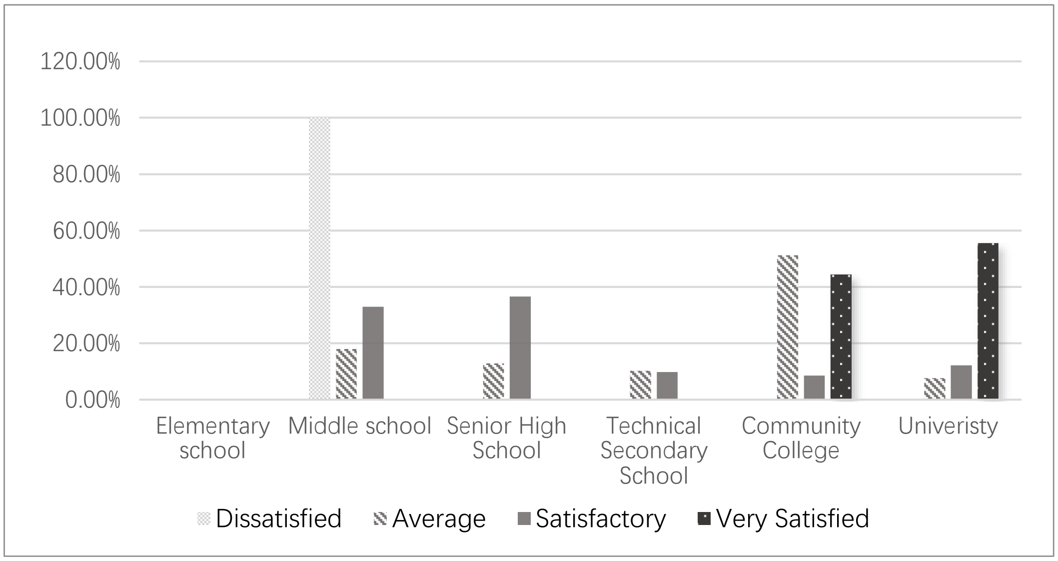


Figure 2 I

Educational attainment of family members and family income satisfaction in Chunhua Town

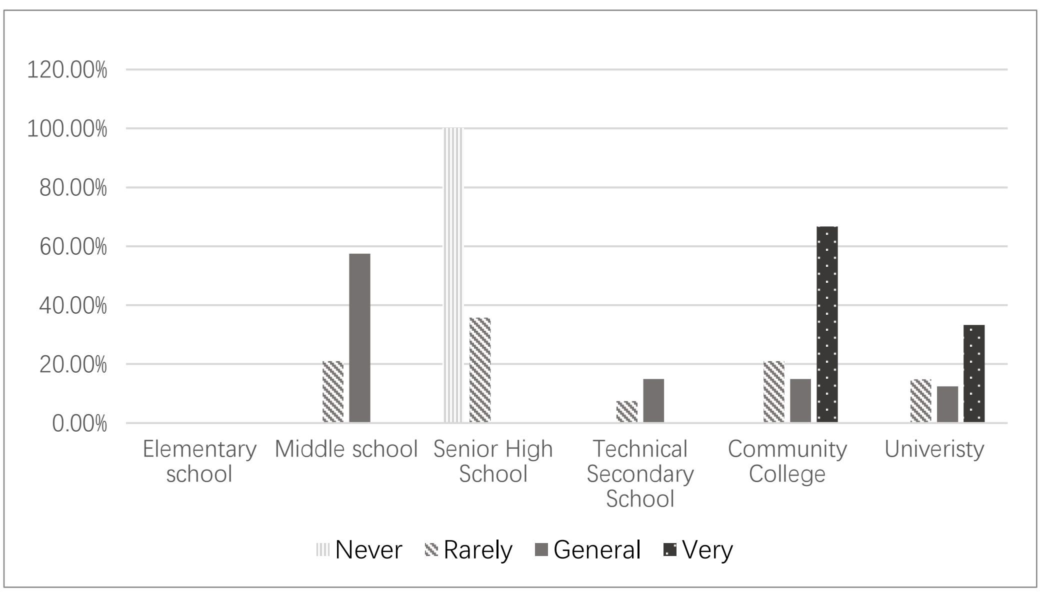


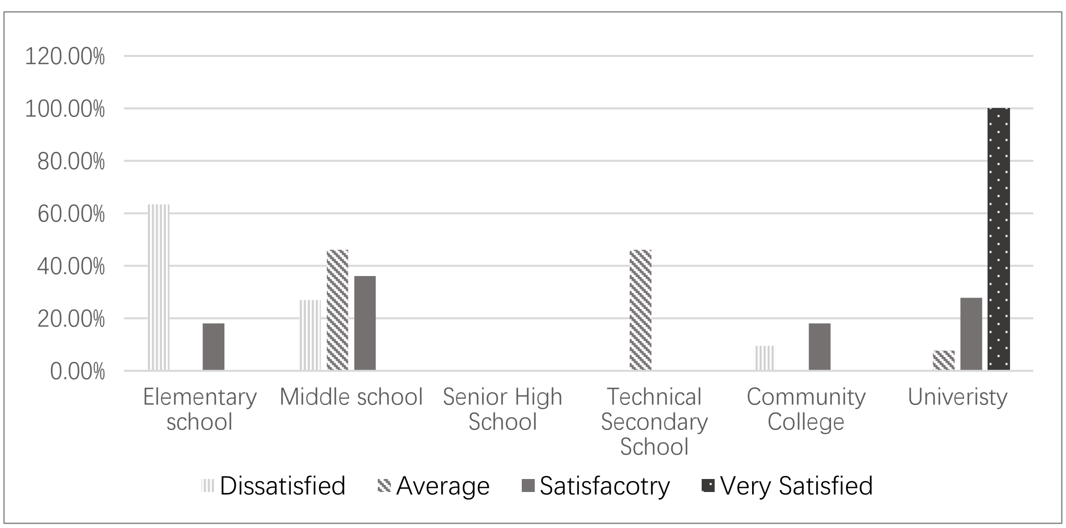
Figure 2 II

Educational attainment of family members and attention to economic and financial information in Chunhua Town

Figure 3 shows the level of satisfaction with income and the level of interest in economic and financial information of the population at all levels of education. The income of the respondents is also taken into account. This shows the close correlation between “education level” and “income satisfaction” of rural residents in the underdeveloped area of Qvyang Township. Most of the villagers with elementary school education do not pay attention to economic and financial information, and their income satisfaction is low. Residents with middle school education also pay less attention to economic and financial information, and their income satisfaction is average. In addition, residents with a technical secondary education pay relatively high attention to economic and financial information. However, their income satisfaction is still relatively low. In this survey, residents' satisfaction with income stabilizes at a relatively average level until they reach the undergraduate education level.

According to common sense, residents with higher levels of education tend to pay more attention to economic and financial information, but the statistical results of this paper show that community college and university students in the underdeveloped area of Qvyang Township pay less attention to economic and financial information than residents of vocational high schools. The reason for this may be that people with different levels of education have different levels of understanding of economic and financial information attention. Residents with elementary and high school education levels tend to pay attention to local information related to personal life, such as wages, prices, and types of goods. However, community college and university people tend to pay attention to national and international macroeconomic and financial information. Secondly, the remote location of Qvyang Township and the low circulation of social capital lead to relatively scarce local economic and financial information, and the feasibility of utilizing financial information to gain benefits is greatly reduced. Therefore, even undergraduates don't pay much attention to economic and financial information.

Figure 3 I



Educational attainment of family members and family income satisfaction in Qvyang Town

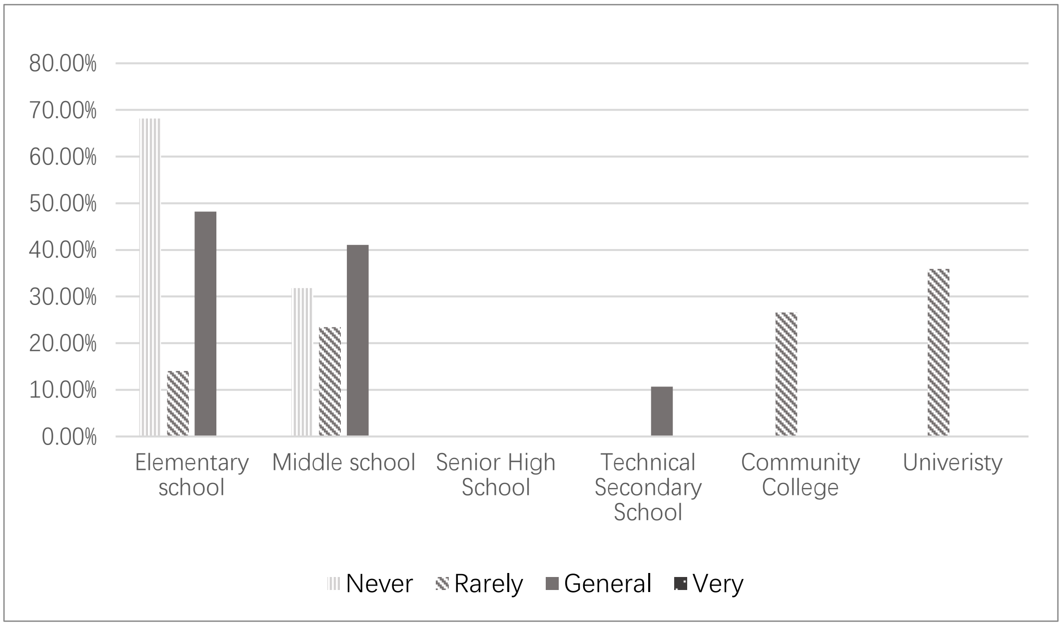


Figure 3 II

Educational attainment of family members and attention to economic and financial information in Qvyang Town

The effect of education level on income satisfaction and information attention is different in Qvyang Township and Chunhua Township. In Qvyang Township, individuals with a technical secondary school are more sensitive to economic and financial information attention, while undergraduates are more sensitive to income satisfaction. In Chunhua Township, individuals with a community college degree are more sensitive to information attention and income satisfaction.

Angrist and Krueger (1990) developed a theory that an additional year of education increases income by 9%. This shows that as the level of education increases, so does income. In addition, there is an income gap between the two regions, and according to the fact that inequality affects people's preferences and that people's satisfaction with life in unequal countries depends more on their income (Quispe-Torreblanca, E. G. et.al 2021), it can be seen that income has a direct effect on life satisfaction. In contrast, there is minimal income disparity between the regions. As demonstrated by Quispe-Torreblanca, E. G., Brown, G. D et al., the positive impact of increased income on life satisfaction is greater in countries with lower income inequality. It can be seen that the higher the income the higher the satisfaction with life, and the correlation between life satisfaction and satisfaction with income is also high. Consequently, it can be concluded that income satisfaction increases with the increase in education, validating Hypothesis 1.

In order to test Hypothesis 2, a regression analysis was conducted using both the ordered logistic and probit models, the results of which are presented in Table 4. The coefficients of the two models measuring "the degree of attention to economic and financial information in general" are significantly non-zero. In the logistic model, the odds ratio (OR) is represented by β*e. In this study, the OR is equal to 1.509*e=4.10188. The results demonstrate that, when other variables are held constant, an increase of one unit in the independent variable “the degree of attention to economic and financial information” is increased by one unit, the likelihood that residents who pay attention to economic and financial information will be more satisfied with their personal incomes is more than four times higher than that of those who don't. The findings indicate that irrespective of whether the ordered logistic or ordered probit model is employed, there is a notable positive association between the level of residents' attention to financial and economic information and their satisfaction with household income. Consequently, Hypothesis 2 is validated. It can be reasonably deduced that an elevated level of focus on economic and financial data may increase income satisfaction.

Table 4

The baseline regression results

	Logit	Probit
	Family Income Satisfaction	Family Income Satisfaction
Attention to economic and financial information in daily life	1.509***	0.841***
	(0.298)	(0.162)
Whether your family has invested in projects	0.705*	0.371*
	(0.370)	(0.203)
Main Sources of Household Income	0.432***	0.234***
	(0.134)	(0.0733)
Average monthly food expenses	0.190	0.138
	(0.169)	(0.0930)
Average monthly spending on utilities and fuel	0.0218	-0.0298
	(0.177)	(0.0960)
Satisfaction with current rural consumer protection efforts	2.390***	1.391***
	(0.262)	(0.152)
Satisfaction with the rural cultural infrastructure for cultural consumption	0.645**	0.364**

	(0.286)	(0.166)
N	287	287
pseudo R2	0.427	0.430

Standard errors in parentheses

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

This paper analyzes the impact of the level of economic development on residents' income satisfaction by comparing the differences in GDP and per capita disposable income between Changsha County, a developed area, and Qvyang County, a less developed area. As shown in (Fig. 4) and (Fig. 5), the GDP and per capita disposable income of Changsha County are markedly higher than that of Qvyang County. In Changsha County, 39.31% of the residents are satisfied with their income and above, while only 4.14% report dissatisfaction. In contrast, only 12.67% of residents in Qvyang Township expressed satisfaction or greater satisfaction with their income, while 44.37% indicated dissatisfaction with their income. The data from the *Hunan Provincial Statistical Yearbook* and the results of the questionnaire survey indicate a positive correlation between economic development and income satisfaction. Residents' income satisfaction increases with economic development, which supports Hypothesis 3.

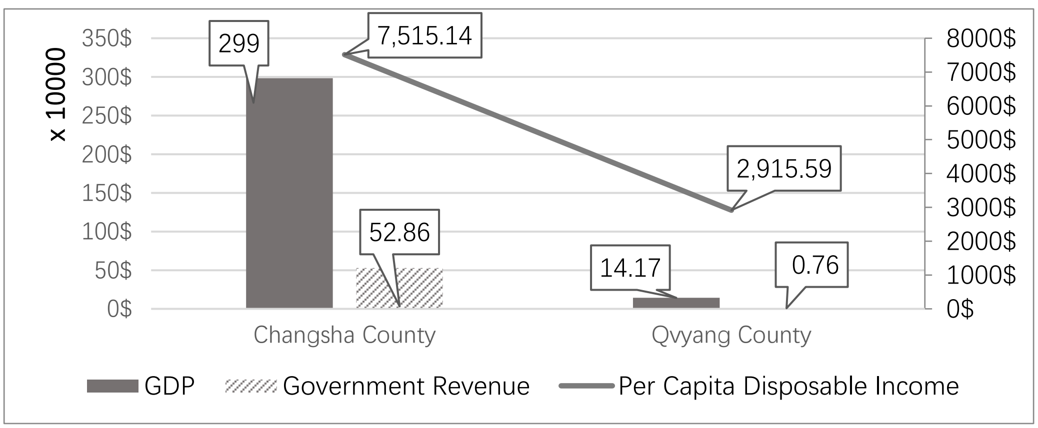


Figure 4

The development levels between developed and less developed regions

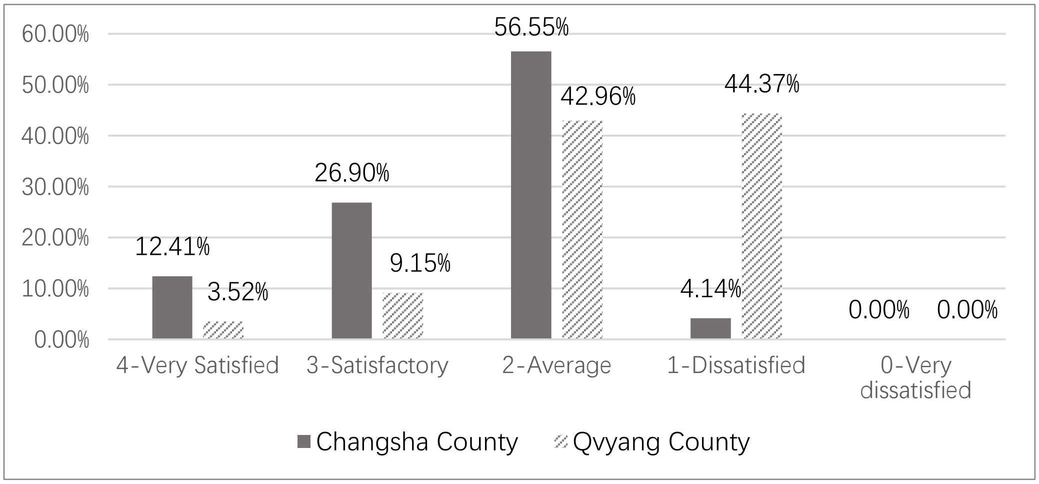


Figure 5

The income satisfaction between developed and less developed regions

Robustness analysis

Adding explanatory variables and replacing explanatory variables are commonly used robustness research methods. In order to verify whether the empirical results are robust, this paper adds two control variables: monthly expenditure on purchasing daily necessities and satisfaction with rural environmental health conditions. The results of the robustness test are shown in Table 5 I. It can be seen that the coefficients of individual satisfaction with household income and attention to economic and financial information are still positive and significant, which supports Hypothesis 2 of this paper.

Table 5

The results of robustness I

	Logit	Probit
	Family Income Satisfaction	Family Income Satisfaction
Attention to economic and financial information in daily life	2.849***	1.472***
	(0.404)	(0.207)
Whether your family has invested in projects	0.450	0.257
	(0.430)	(0.224)
Main Sources of Household Income	0.632***	0.314***
	(0.157)	(0.0809)
Average monthly food expenses	-0.0236	0.0354
	(0.198)	(0.104)
Average monthly spending on utilities and fuel	-1.280***	-0.685***
	(0.245)	(0.139)
Satisfaction with current rural consumer protection efforts	3.326***	1.727***
	(0.391)	(0.193)
Monthly Expenditure on Daily Necessities	1.558***	0.801***
	(0.226)	(0.120)
Satisfaction with rural sanitation	-0.196	0.00244
	(0.388)	(0.214)
Satisfaction with the rural cultural infrastructure for cultural consumption	0.418	0.172
	(0.291)	(0.171)
N	287	287
pseudo R2	0.514	0.505

Standard errors in parentheses

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

The results of the robustness test, in which household income is used as the explanatory variable in place of satisfaction with current household income, are presented in Table 5 II. It can be seen that the level of significance is high and positively correlated when annual household income is used instead of satisfaction with household income. Therefore, Hypothesis 2 of this paper is validated.

Table 5

The results of Robustness II

	Logit	Probit
	Family income	Family income
Attention to economic and financial information in daily life	1.302***	0.708***
	(0.239)	(0.129)
Whether your family has invested in projects	0.629**	0.418**
	(0.312)	(0.170)
Main Sources of Household Income	-0.190*	-0.0853
	(0.114)	(0.0627)
Average monthly food expenses	1.262***	0.717***
	(0.156)	(0.0838)
Average monthly spending on utilities and fuel	0.437***	0.282***
	(0.147)	(0.0850)
Satisfaction with current rural consumer protection efforts	0.856***	0.454***
	(0.184)	(0.111)
Satisfaction with the rural cultural infrastructure for cultural consumption	-1.070***	-0.530***
	(0.254)	(0.143)
N	287	287
pseudo R2	0.188	0.186

Standard errors in parentheses

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

The results of the aforementioned robustness tests substantiate the conclusions presented in this paper.

Conclusions and Implications

The preceding analysis indicates that the income satisfaction of rural residents is primarily influenced by their economic and financial attention level, educational attainment, and level of economic development. Compared to urban residents, rural residents, especially those in less developed areas, process less economic and financial knowledge. Therefore, we propose the following policy recommendations:

The level of education attained by rural residents has a significant bearing on their income satisfaction. To enhance the educational attainment of residents, particularly those in less developed regions, it is advised that the government augment its financial commitment to the education sector for rural consumers. Chunhua Town is situated in close proximity to the provincial capital city, and the disparity between urban and rural living standards is relatively modest. Qvyang Township is a remote area where the gap between urban and rural living standards is significant. For less developed areas, it is of the utmost importance to narrow this gap to achieve income satisfaction.

The government can play a role by providing smooth channels to increase the accessibility of economic and financial information. For less developed and remote areas, it is crucial to establish effective channels and fully utilize the Internet as an effective tool to improve the ease of getting information.

It is recommended that the government implement measures to enhance financial literacy education for consumers, thereby improving their capacity to analyze economic and financial information. In particular, financial literacy education should be provided to empty nesters and women who have been left behind to assist them in recognizing illegal fundraising, financial fraud, and pyramid schemes.

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