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The relationships among financial literacy, financial behaviors, financial attitudes, and homeownership within low-moderate income households in Los Angeles county

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THE RELATIONSHIPS AMONG FINANCIAL LITERACY, FINANCIAL BEHAVIORS,

FINANCIAL ATTITUDES, AND HOMEOWNERSHIP WITHIN LOW-MODERATE

INCOME HOUSEHOLDS IN LOS ANGELES COUNTY

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DEDICATION

I dedicate this dissertation to my beloved parents, Alhaji Ahmed Almakura and the late Hajiya Fatima Ahmed, for being supportive and passionate about my educational pursuits. They gave us all they had to ensure that we attend quality schools and attain the highest level of academic achievement. Also, to my late brother, Tanimu Almakura (Atabs), with whom I started my educational journey. I know you are somewhere in heaven and not here to witness this milestone. However, you have always been here with me in spirit. I am forever grateful for all your support, and I love you and miss you dearly.

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VITA

Aliyu Ahmed is a Vice President of consumer banking at Bank of America, where he developed his banking and financial services expertise. With nearly two decades of working to improve people's economic lives, he has acquired solid experience in banking and finance and global macroeconomic dynamics. As an experienced banker, he manages the most ultra-affluent Bank of America financial center in the nation, dealing with high-net-worth individuals and small and large businesses.

Aliyu is currently the Chair Committee of "We Can Deliver" at the Bank of America West Los Angeles regional council. He leads the bank's initiatives in Greater Los Angeles, demonstrating to associates ways that Bank of America can assist families and friends with their financial needs and help make their financial lives better. Prior to this, Aliyu was the Co-Chair of Associate Connectivity, leading the initiatives that bring together all associates in the Greater Los Angeles region.

Aliyu is a recipient of the 2022 Diaspora role model award by the Nigerian in Diaspora Commission. Aliyu was selected by the Organization for Africa, Caribbean, and Pacific States (OACPS) to deliver a goodwill message to 79 Heads of state and members of OACPS countries.

Aliyu's passion for sharing knowledge has extended to appearing on media stations like Voice of America (VOA). He has frequently contributed to the African macroeconomics (Nigeria)-Hausa session. At NYU Stern School of Business, he persuaded and led a team of African students to develop a risk management framework for Sovereign Wealth Funds that would work specifically for Africa.

He holds a bachelor's degree in Banking and Finance from the University of Maiduguri, Nigeria, and graduated top of his class with honors in 1994, an MBA from the University of Wales, Cardiff Business School – the UK, MS in Risk Management from New York University-Stern School of Business, New York, US. He is a Harvard alumnus who graduated from the Program for Leadership Development (PLDA)-Harvard Business School, Boston, Massachusetts, in 2010. Aliyu also obtained several certifications ranging from strategic negotiation, competitive strategy, to risk management for corporate leaders, from Harvard Business School.

ABSTRACT

This dissertation explores how financial literacy, financial capability, financial self-efficacy, and future time perspective affect the likelihood of low-moderate income (LMI) households in Los Angeles County owning a home and holding a mortgage. It draws on existing literature on financial literacy, financial capability, financial self-efficacy, future time perspective, and homeownership to develop a theoretical framework that identifies the factors that influence LMI households' access to homeownership. Using secondary data merged from six surveys conducted by the University of Southern California (USC) Understanding America Study (UAS) from 2015 to 2022, it analyzes the relationships among financial literacy, financial behaviors, financial attitudes, and mortgage holding among 2,098 participants. The findings revealed significant positive associations between holding a mortgage and financial literacy, income, age, Hispanic ethnicity, and specific levels of educational attainment. However, financial self-efficacy, financial capability, and future time perspective did not demonstrate significant moderating effects in the relationship between financial literacy and holding a mortgage. The dissertation concludes that enhancing financial literacy among LMI households is crucial for increasing their access to homeownership and suggests possible interventions and policies for doing so.

Keywords: financial literacy, financial capability, financial self-efficacy, future time perspective, low-moderate-income

CHAPTER 1: INTRODUCTION

Overview

Over the past several decades, homeownership access for low-moderate income (LMI) communities has generated debate in academia, practice, and the public sector in the United States and globally. Although some suggest it is not for everybody (Goodman & Mayer, 2018), there is evidence that homeownership ushers in many benefits. Amongst those, owning a home is a medium that families use to build wealth and is seen as a security by most households. During President Bill Clinton's Administration, the U.S. government embraced this as a welcome idea. Homeownership has been incorporated into the national homeownership plan to boost the homeownership rate in the U.S. (Goodman & Mayer, 2018). Subsequent administrations carried this mandate to ensure that most Americans own a home.

According to Katz (2002), "The United States has been called a nation of homeowners and people who aspire to be homeowners" (p. 9). In 2003, President Bush signed the American Dream Down Payment Act into law to make homeownership accessible to all Americans regardless of socioeconomic background. However, the reality today is that homeownership is still a dream unattainable for most LMI households (Lusardi & Tufano, 2010; Turnham, 2010). Amongst other factors that contribute to this, the most fundamental reasons are:

- Low short-term and long-term savings
- Low credit scores
- Low income
- High spending (short-term debt)
- Low financial literacy levels (Bhutta et al., 2017).

According to the U.S. Federal Reserve Bank, homeownership (5-year estimate for Los Angeles County) was 49.2% in 2020. These figures show an improvement from a record low of 48.4% in 2016. Such positive trends have yet to reach specific segments of the Los Angeles population, especially LMI households and particular ethnicities (US Fed. Reserve, 2019). Instead, homeownership rates for minority and LMI households in Los Angeles remain at a meager rate compared to their White counterparts, with white at 38%, followed by Asians at 35%, Hispanics at 19%, and Blacks at 17% (CAR, 2020). These problems are attributable to many factors. For example, the U.S. Federal Reserve found that most U.S. households have less than $1,000 in their savings and 44% need more to cover a $400 emergency (U.S. Federal Reserve, 2019). In addition, a HUD study suggests that a lack of financial literacy is a potential barrier to homeownership (HUD, 2010).

One of the fundamental reasons for such low rates of Homeownership for LMI in Los Angeles is that improving economic conditions have not helped households, particularly LMI households. According to the U.S. Census Bureau in 2016, more than 64% of households in Los Angeles are currently renting, which ranks it fourth among the 50 largest U.S. cities in terms of household rental percentage. IPUMS American Community Survey (ACS) data shows that LMI neighborhoods are composed of primarily Black and Hispanic households, accounting for 58% of lowest-income families (Bohn et al., 2019). Generally, Black and Hispanic borrowers had lower median loan amounts, lower median credit scores, higher denial rates, higher median interest rates, and total loan costs compared to non-Hispanic white and Asian borrowers (Liu et al., 2021). For example, in 2021, Black and Hispanic applicants experienced rejection rates of 15.7% and 9.8% for the first lien, 1-4 family, site-built, owner-occupied conventional, closed-

end home purchase loans (Lie et al., 2021). On the other hand, the denial rates for Asian and non-Hispanic-White applicants were 7.5% and 5.6%, respectively (Liu et al., 2021).

According to the Census Bureau's ACS (2019), the homeownership rate in California was 63.2% for whites, 60.2% for Asians, 44.1% for Hispanics, and 36.8% for Blacks. Furthermore, according to the California Affordability Realtor (CAR) index, there is a wide gap in affordability among ethnic groups, especially those in the LMI category. In summary, the lack of LMI homeownership in Los Angeles could be considered a crisis.

In addition to building more affordable homes, several other tactical measures have been proposed. These include affordable housing linkage fees, removing regulatory barriers, raising funds for affordable housing, and building and preserving 15,000 affordable housing units (Garcetti, 2021). Moreover, LMI households need to be able to maximize their chances of qualifying for and holding a mortgage.

From the demand side, findings from past research suggest that people with lower financial literacy typically pay more for credit cards and other short-term borrowings (Lusardi & Tufano, 2015). Furthermore, low financial literacy impedes their ability to save or plan for long-term goals such as homeownership, higher education, and retirement (Braunstein & Welch, 2002; Turnham, 2010). In the aftermath of the Great Recession, LMI communities have experienced high inflation, rising debts, housing inventory shortages, unequal access to lending, employment losses, high default rates, and eviction or foreclosure that make homeownership a dream unattainable (Abel & Diez, 2021; Haughwout et. al., 2023; Servon & Kaestner, 2008). A HUD study suggests that a lack of financial literacy is a potential barrier to homeownership (HUD, 2010).

There are other barriers to homeownership beyond financial literacy. For example, banks should extend more credit to the LMI communities as part of the Community Reinvestment Act (CRA). The CRA encourages banks to meet the credit needs of their entire community, including LMI neighborhoods. It requires banks to have a record of lending and investment activities that benefit LMI individuals and communities in the areas they serve, due to stringent underwriting requirements, insufficient credit, income, and other risk factors (Bhutta et al., 2017). In measuring the proportion of household lending to LMI households by banks and other financial institutions including credit unions over a specific period, The Federal Reserve Bank's annual collection of data gathered under the Home Mortgage Disclosure Act showed that the three largest banks' lending to LMI households decreased from 32% in 2010 to 15% in 2016 (Bhutta et al., 2017). This indicates a substantial reduction in their lending activities to LMI households during that six-year period. Although there has been an increase in the percentage of LMI lending since 2017, this increase has been primarily within refinancing activities, attributed to lower interest rates and other regulatory requirements. Equally important is the percentage of LMI home purchase activities, which shows a slight increase in 2018, 2019, and 2020 at 28%, 28.6%, and 30.4%. (Liu et al., 2021). The percentage of refinancing activities was 29% in 2018, 23.1% in 2019, and 18.9% in 2020, showing a consistent decline (Jo et al., 2021). According to Consumer Financial Protection (2021), the largest banks' share of lending to LMI remained at the same rate in 2021 as in previous years, with minimal improvement.

Mortgage loans to LMI communities are provided by smaller banks, credit unions, and other independent financial companies (Abrams, 2017; Jo et al., 2021). Servon and Kaestner (2008) suggested that it is crucial to identify opportunities to teach financial skills such as home purchasing or filing for bankruptcy. Furthermore, financial literacy needs to be improved among

LMI households. Zhan et al. (2006) pointed out that the limited access many low-income people have to financial and community institutions, including government agencies or non-profit organizations, may, in turn, exacerbate their deficiencies. Financial literacy is low both in the U.S. and globally, especially in low-income communities (Lerman & Bell, 2006). According to Lerman and Bell (2006), "What is lacking is not information (who is charging what?), but rather the ability to interpret the information (how well do alternative mortgage strategies fit my needs?)" (p. 2). In addition, several studies have found that low-income households lack understanding of the information necessary to make financial decisions. For example, a survey of Americans 50 years and older revealed that only 50% of Americans answered two of the three fundamental questions about interest rates and inflation correctly, which tests their understanding of those concepts (Lusardi & Mitchell, 2004). Only one-third of the participants answered all three precisely (Lusardi, 2019).

Lusardi (2019) observed that the 2017 Survey of Household Economics and Financial Decision Making (SHED) shows that financial knowledge is still meager among LMI. According to Servon and Kaestner (2008), "Although there is not much research on financial education that targets LMI people, that which does exist suggests that pairing financial literacy training with an opportunity to save is beneficial" (p. 279). Similarly, Braunstein and Welch (2002) suggested that low levels of financial literacy have negatively affected the ability to save (Lusardi, 2019).

Technological innovations are growing fast in the financial service sector, with new processes and financial products emerging, resulting in more complexities in individuals' decisions on certain products, such as mortgages (Mauldin et al., 2016). This development requires households to have the financial knowledge to make informed decisions (Lusardi, 2019). Lower-income households allocate a smaller proportion of their overall spending towards

consumption and, as a result, the inflation associated with their specific consumption patterns is not adequately represented in the official consumer price indexes (Brainard, 2022). The Census Bureau Households Pulse Survey shows that, in 2021, households with incomes between $25,000 and $35,000 were approximately 19.3 percentage points more likely to experience significant stress due to inflation compared to households earning between $75,000 and $100,000. On the other hand, households with incomes of $250,000 or more were over 25 percentage points less likely to find recent inflation very stressful compared to lower-income households (Jayashanka & Murphy, 2023).

Problem Addressed

While research is abundant on factors affecting homeownership, Ward and Lynch (2019) suggest an integrated approach to studying financial literacy is absent. Furthermore, Mauldin et al. (2016) indicate that past research on financial literacy should have included LMI households. More broadly, there needs to be an adequate understanding of how factors such as LMI households' financial behaviors and attitudes relate to LMI households holding a mortgage.

Therefore, this dissertation aims to contribute to the existing literature by examining the relationship between financial literacy, financial behaviors, financial attitudes, and homeownership or holding a mortgage among LMI households. From an academic standpoint, this research addresses a notable gap in the literature concerning financial literacy in LMI households and its association with homeownership or holding a mortgage. From a practical perspective, the findings have the potential to inform policies and intervention programs in the private and public sectors, facilitating improved financial literacy and enabling individuals to make informed decisions regarding homeownership or holding a mortgage. Ultimately, this research project endeavors to promote financial inclusion and provide insights into reducing

disparities in homeownership rates by providing valuable insights and recommendations for policymakers, lenders, and community stakeholders thereby fostering more significant equity in access to mortgage and homeownership.

Research Question(s)

This study attempts to answer two questions within Los Angeles County. Table 1 shows a summary of the research questions.

Table 1

Research Questions and Critical Concepts and Constructs

	Questions	Concepts/Constructs
RQ1	What factors, including financial literacy, financial behaviors and financial attitudes are associated with LMI households holding a mortgage?	Financial Literacy Well-being Financial Capability Financial Self-Efficacy Financial Wellness.
RQ2	How do financial Efficacy, capability, and future time perspectives moderate the relationship between financial literacy and LMI holding a mortgage?	Homeownership Financial Self-Efficacy Future Time Perspective Financial Planning Financial Education Financial Capability

Significance of the Research

The significance of the study is that it could help increase homeownership rates among LMI households in Los Angeles County and, by extension, other regions and populations within

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the United States. This study will provide traditional banks and public policy officials with in-depth knowledge to develop requisite tools to help increase access to homeownership among LMIs. Ultimately, realizing the initial goals will promote LMI households' housing stability, inclusive economic growth, and prosperity. The research project targets existing gaps in the literature on the relationship between financial literacy and LMI homeownership.

This study advances the understanding of financial literacy's impact on households' financial decisions, specifically in relation to holding a mortgage and homeownership. It addresses the lack of adequate research targeting mortgage as an asset class, and its association with financial behaviors and financial attitudes among LMI households. Furthermore, this research enhances our understanding of the impact of increased financial literacy on homeownership odds and the complex interplay among factors influencing financial literacy and its effects on holding a mortgage. It advances theory on the interplay between financial knowledge and behaviors and the likelihood of homeownership.

From a practical point of view, this research could lead to understanding the impact of policies and other intervention programs in public and business policies to promote desirable financial literacy, which will positively and appropriately enable people to position themselves for homeownership. Low financial literacy and less responsible financial behaviors and attitudes reduce the likelihood of mortgage qualification and, therefore, homeownership by LMI households and other disadvantaged groups (Gale et al., 2012). Such a quest for economic well-being and capability further motivates this research. Lastly, this research project will promote financial inclusion by pointing toward a pathway to reduce inequality in homeownership rates.

CHAPTER 2: LITERATURE REVIEW

This literature review investigates the extent and impact of financial literacy among LMI households. It reviews financial literacy and other factors associated with homeownership and identifies gaps within the literature that need to be addressed. More importantly, it reviews previous studies to understand financial literacy and its relationship with LMI households' financial behaviors and attitudes.

The aftermath of the Great Recession has left LMI households with rising debts, housing inventory shortages, unequal access to lending, and high default rates that make the prospect of homeownership a dream unattainable. More recently, the global pandemic has brought about significant economic disruption across the United States and the rest of the world. Fundamentally, LMI households face more stressful economic conditions in terms of less employment and financial and housing instability (Bufe et al., 2021).

Despite much research on financial literacy, we still need more understanding of how financial literacy impacts the financial behaviors of LMI decision-makers. This research will explore the following questions:

- What factors including financial literacy, financial behaviors, and financial attitudes, are associated with LMI households holding a mortgage?
- How do financial efficacy, financial capability, and future time perspective moderate the relationship between financial literacy and LMI households holding a mortgage?

Financial literacy is a multidimensional construct encompassing various knowledge, skills, and behaviors in managing personal finances effectively. As a result, it is essential to

adopt a comprehensive approach that considers a diverse range of factors and contexts to understand the complex dynamics that influence LMI homeownership and access to mortgages.

By examining the different components of financial literacy, such as budgeting, saving, credit management, and mortgage understanding, we can identify specific areas where LMI individuals may need additional support and education. Furthermore, delving into the contextual factors, including socioeconomic conditions, cultural influences, and access to financial resources, can shed light on LMI communities' unique challenges when seeking homeownership opportunities or holding a mortgage.

Method for Conducting the Literature Review

This study took a rigorous search to identify existing literature on financial literacy by leveraging several databases that include but are not limited to JSTOR, Google Scholar, EBSCO, Scopus, and government domains such as CRA, HUD, and Federal Financial Institutions Examination Council (FFIEC). Several phrases and keywords were used. These include financial literacy concepts, socioeconomic and demographic factors, along with LMI homeownership research. This entailed refining search attempts by repeating and modifying results to include related concepts such as LMI financial knowledge and LMI financial education.

I discovered several concepts and constructs pertinent to the study during the initial search. These include financial well-being, financial capability, and financial knowledge. I expanded the inquiry to include government domains, specifically the Department of Housing and Urban Development (HUD), the Community Reinvestment Act, and the U.S. Census Bureau, using a combination of keywords and phrases such as the definition of LMI, LMI income, socioeconomic factors, and homeownership tenure (Table 2).

Table 2

Domain and Selected Search Terms

Search Domain	Financial Literacy	Socioeconomic/Demographic And other Household Factors	Homeownership
Search Terms	Financial education and bottom of the pyramid; LMI financial literacy level and LMI; LMI financial decision making; Measuring financial literacy; Role of financial literacy. Importance of financial literacy financial knowledge; LMI attitudes: Financial capability; Financial well-being; Financial illiteracy, and financial concepts	LMI income; LMI saving; CRA Definition of LMI; LMI and Spending. Low-Income households; Saving behavior.	Access to homeownership; Wealth accumulation; Homeownership rates, Homeownership tenure, Lending to LMI, Affordable housing. Rent vs. Own

Searching the above concepts and constructs revealed relevant results. It was deemed necessary to narrow the search because the literature on financial literacy is significant, and interrelated concepts that could create ambiguity in understanding the key related concepts and constructs. This process allowed the study to focus on assessing the relationship between financial literacy and LMI households holding a mortgage (Cooper, 1988) by excluding certain key constructs and concepts.

Although well-documented research on financial decisions related to this research topic is found in past literature, it was noted from the initial search that such theoretical and empirical contributions are limited. This entails that while there is existing research on financial decisions within the context of the research topic which involves LMI households, particularly in Los Angeles County, the available literature has certain gaps necessitating further research. Thus, the literature review for this study selected some of the theories used in prior research to ground the

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analysis (e.g., the Life Cycle Hypothesis Theory, the Theory of Human Capital). The Life Cycle Hypothesis theory posits that individuals tend to organize their savings ad consumption patterns in ways that optimize their marginal utility over their lifetime (Modigliani & Brumberg, 1954). One of the fundamental barriers to homeownership is a down-payment. Most LMI's are struggling to make ends meet; therefore, it is important to highlight the crucial role of LMI savings behavior as it patterns their behaviors, attitudes around spending, budgeting, and saving. On the other hand, the Income Hypothesis theory is a foundational framework that grounds this research on financial literacy and holding a mortgage among LMI households. The Income Hypothesis theory proposes that individuals' income level significantly influences their consumption and investment decisions. It posits those higher levels of income lead to increased savings, investment in assets like homes, and overall wealth accumulation. The theory offers insights into the challenges faced by LMI in qualifying for mortgages. The Income Hypothesis theory also reinforces the importance of addressing income-related constraints for LMI households to encourage homeownership. Building more affordable housing and developing targeted financial literacy programs for LMI individuals align with the theory's premise of improving income and financial capabilities to promote asset ownership, such as homes.

Overall, the Income Hypothesis theory provides a theoretical lens through which to understand the influence of income on homeownership decisions and the role of financial literacy in bridging the gap between income and mortgage holding. It helps to contextualize the findings of this research. It contributes to advancing our understanding of the complex interplay between income, financial literacy, and homeownership among diverse populations, particularly LMI households in Los Angeles County.

More fundamentally, this literature review incorporates a practice focus which means that the literature review goes beyond merely reviewing existing theories and concepts. Instead, it seeks to identify practical insights and real-world implications that can be useful for policymakers, financial institutions, and community organizations. The goal is to provide actionable information that can be used to address the challenges and promote homeownership opportunities for LMI households.

The literature review specifically investigates the relationship between financial literacy and homeownership among LMI households. It seeks to understand how financial literacy, or the level of knowledge and understanding of financial concepts, impacts the likelihood of LMI households becoming homeowners. Additionally, the review explores other factors associated with homeownership, such as income, employment status, and cultural inclinations.

By focusing on LMI households, the literature review acknowledges the unique challenges faced by this specific population in accessing homeownership opportunities. It aims to identify potential barriers and opportunities for LMI households to become homeowners and explore ways to address these challenges effectively. By adopting this approach, the research seeks to contribute new knowledge to practice and extend the existing financial literacy literature beyond its current boundaries (Cooper, 1988). Through extensive searches and a systematic review of recent articles and journals, I identified prior literature on financial literacy, financial capability, financial efficacy, financial knowledge, and financial well-being, and examined how these concepts were defined, operationalized, and measured (Figure 1).

Figure 1

Literature Review Conceptual Map
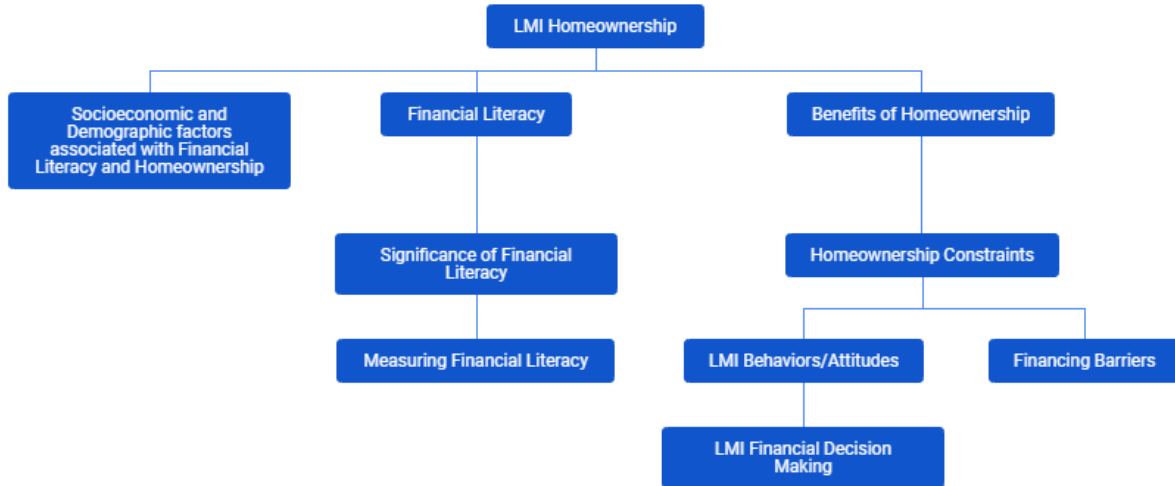
Furthermore, in the search for key constructs (e.g., financial capability, financial self-efficacy, future time perspective), I identified their potential role in moderating the relationship between the key IV (financial literacy) and the DV (holding a mortgage). By delving in the literature, these variables were selected as employed based on their potential role in applying the financial knowledge and skills necessary to manage money.

Financial Capability

Financial capability, as defined by the World Bank (2018), goes beyond mere financial literacy and includes an individual's knowledge, attitudes, skills, and behaviors in managing their finances to fit their specific needs and goals. A more comprehensive understanding of the factors influencing homeownership decisions can be achieved by incorporating financial capability as a moderator in the current study. Financial capability encompasses not only possessing financial knowledge but also the practical application of that knowledge and the confidence and skills to manage financial matters effectively. Additionally, as proposed by Hung et al. (2009), the definition of financial literacy emphasizes the possession of financial knowledge, skills, and the

ability to apply that knowledge in managing financial matters. While acquiring financial knowledge is undoubtedly crucial, it is equally essential to explore how it translates into effective money management and optimal financial decision-making.

Fernandes et al. (2014) used behavior measures to predict the effects of financial literacy on behaviors in a study that measured the financial literacy of low-income individuals and found a strong association between financial literacy and financial behaviors using willingness to plan, budget, save, invest, spend and payment behaviors (e.g., how frequently the respondents pay their credit cards). Individuals with higher financial literacy may be more likely to hold a mortgage. Still, the strength of this relationship could vary based on their level of financial capability. Financially capable individuals may be better equipped to navigate the complexities of mortgage decisions and secure loans, leading to a stronger positive relationship between financial literacy and holding a mortgage.

Furthermore, financial capability can be a mitigating factor, especially for LMI households. It may help overcome potential barriers to accessing mortgages, such as understanding mortgage terms, calculating affordability, and navigating the mortgage application process. Thus, financial capability considers an individual's overall financial well-being, including the ability to manage debts, savings, and investments. Incorporating financial capability as a moderator adds a holistic perspective to the analysis, acknowledging that multiple factors influence homeownership outcomes.

Financial Self-Efficacy

Financial self-efficacy and financial literacy are closely related constructs, and they can significantly influence each other. Financial self-efficacy refers to an individual's belief in their ability to engage in financial tasks and make sound financial decisions successfully. Financial

self-efficacy is the level of confidence an individual displays in his or her ability to access, use financial products or services, make financial decisions, and deal with unexpected financial events (Noor et al., 2020). Fernandes et al. (2014) used financial self-efficacy (consumer confidence in financial information) and general self-efficacy to predict behavior change with financial literacy. Higher levels of financial literacy can lead to increased financial self-efficacy. As individuals gain more knowledge and understanding of financial matters, they may feel more confident managing their finances effectively. Individuals with higher financial self-efficacy are more likely to seek out financial information and resources, which can lead to increased financial literacy. This, in turn, can result in better financial decision-making skills. Therefore, financial self-efficacy can influence an individual's willingness to engage with financial information and develop their financial literacy. Higher levels of financial self-efficacy may encourage individuals to take proactive steps in learning about personal finance. Therefore, individuals with high financial self-efficacy may be more motivated to seek educational opportunities and resources to enhance their financial knowledge (Fernandes et al., 2014).

Future Time Perspective

Remund (2010) argues that "Financial literacy is a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions" (p. 284). Fernandes et al. (2014) used attitude measures to assess how people put money aside regularly for the future, assessed how individuals performed financial planning for the future, and how they saved now for old age to predict the effect of financial literacy on behavior change. This literature propels the choice of future time perspective as a moderator in the relationship between financial literacy and

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homeownership. The literature review was conducted by exploring three frames of reference. The first was socioeconomic and demographic factors, which incorporate a review of LMI households saving and LMI household income by reflecting on the Life Cycle Hypothesis theory. Second, I explored Human Capital Theory to understand financial literacy. Finally, LMI homeownership benefits were examined.

Conceptualizing Financial Literacy

The Meaning of Financial Literacy

Although there is an absence of a universal meaning of financial literacy, several definitions of financial literacy have emerged in the literature. These include (a) a specific form of knowledge, (b) the ability or skills to apply that knowledge, (c) perceived knowledge, (d) good financial behavior, and (e) financial experiences (Hung et al., 2009). According to Hung et al. (2012), financial literacy is "a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being" (p. 8). Another definition of financial literacy that has received widespread acceptance was articulated in the 2008 President's Advisory Council on Financial Literacy (PACFL). This definition stated that financial literacy is the ability to use knowledge and skills to manage resources effectively for a lifetime of well-being (Lusardi, 2019).

The Organization for Economic Co-operation and Development (OECD) defines financial literacy as not only encompassing the knowledge and understanding of financial concepts and risks but also including the skills, motivation, and confidence to apply such knowledge and understanding to make good decisions across a range of financial contexts, to raise the financial well-being of individuals and society, and to enable participation in economic life (Lusardi, 2019). Huston (2010) suggested defining financial literacy as "measuring how well an individual can understand and use personal finance-related information" (p. 306).

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Remund (2010) defines it as a person's competency for managing money. Remund (2010)'s research links the theory of social learning with the idea of financial literacy by arguing that the conceptual definition of financial literacy falls into five distinct categories: (1) knowledge of financial concepts, (2) ability to communicate about economic ideas, (3) aptitude in managing personal finances, (4) skill in making appropriate financial decisions, and (5) confidence in planning effectively for future financial needs. According to Dodaro (2011), "Financial literacy encompasses both financial education and consumers' behavior as it relates to their ability to make informed judgments" (p. 2).

Hung et al. (2009) attempt to reconcile the various definitions of financial literacy. These varying definitions have brought about many debates on accepting a single definition of financial literacy. Hence, the importance to reconcile the different definitions of financial literacy to derive a composite or a more comprehensive definition. According to Hung et al. (2009), financial literacy is "knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being" (p. 12).

Financial literacy can be defined as the multifaceted capacity and empowerment to actively seek, acquire, and demonstrate comprehensive financial knowledge and skills necessary for astute money management and informed financial decision-making. This definition highlights the significance of understanding financial concepts, strategies, and instruments, which enables individuals to navigate the complexities of today's financial landscape with confidence and competence. Being financially literate goes beyond merely accumulating knowledge; it entails applying it to manage personal finances wisely, budget effectively, save prudently, invest wisely, and mitigate financial risks. Additionally, financial literacy involves

critically evaluating financial products and services, equipping individuals to make well-informed choices that align with their long-term financial goals.

A financially literate individual is not passive but proactive in seeking ongoing financial education, continuously improving their financial knowledge, and adapting to changes in the financial environment. Armed with this knowledge, they can make sound financial decisions that reflect their values and aspirations while also considering the potential implications for their future financial well-being. One critical tenet of financial literacy is empowerment; it bestows individuals with the tools and resilience to confront life's financial challenges with confidence and resourcefulness. It also fosters a sense of responsibility and accountability for financial actions, promoting stability and security in managing personal finances.

Above all, financial literacy transcends mere data acquisition; it entails developing a comprehensive understanding of personal finances and the broader financial system. This transformative skill empowers individuals to take charge of their financial future, paving the way to financial freedom and enabling them to contribute positively to their communities and society. By presenting this concise definition of financial literacy, we can better appreciate its multidimensional significance and recognize its potential to shape the financial well-being of individuals and society. Financial literacy includes many variables, such as financial knowledge, financial skills, perceived knowledge, and financial behavior.

Table 3 summarizes definitions of financial literacy that are drawn from a variety of studies. For example, Moore's (2003) definition highlights the importance of practical experience and the application of knowledge. Lusardi and Tufano (2007) incorporate debt literacy in financial decisions. The OECD (2005)'s definition focuses on understanding financial products and concepts through information, instruction, and objective advice while also discussing the skills, competency, and motivation to apply the knowledge acquired. Hung

et al.'s (2012) definition includes the attitude and behavior necessary to make informed

financial decisions.

Table 3

Conceptual Definitions of Financial Literacy

Source	Conceptual Definition
Moore (2003)	"Individuals are considered financially literate if they are competent and can demonstrate they have used knowledge they have learned. Financial literacy cannot be measured directly so proxies must be used. Literacy is obtained through practical experience and active integration of knowledge. As people become more literate, they become increasingly more financially sophisticated, and it is conjectured that this may also mean that an individual may be more competent" (p. 29).
Organization for Economic Co-operation and Development (OECD) (2005)	OECD (2005) defined financial literacy as not only encompassing the knowledge and understanding of financial concepts and risks but also including the skills, motivation, and confidence to apply such knowledge and understanding to make good decisions across a range of financial contexts, to raise the financial well-being of individuals and society, and to enable participation in economic life.
Lusardi and Mitchell (2007c)	Familiarity with "the most basic economic concepts needed to make sensible saving and investment decisions" (p. 36)
Lusardi and Tufano (2008)	Focus on debt literacy, a financial literacy component, defines it as "the ability to make simple decisions regarding debt contracts, in particular how one applies basic knowledge about interest compounding, measured in the context of everyday financial choices" (p. 1).
Remund (2010)	Remund (2010) defines financial literacy as "relates to a person's competency for managing money."
Huston (2010)	Huston (2010) defines financial literacy as "measuring how well an individual can understand and use personal finance-related information" (p. 306).
Hung, Yoong, and Brown (2012)	Financial literacy is "a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being" (p. 8).

In this study, financial literacy is measured based on an integrated definition given by Hung et al. (2009). As proposed by Hung et al. (2009), financial literacy encompasses not only the knowledge of basic economic and financial concepts but also the practical ability to apply that knowledge and other financial skills to effectively manage financial resources throughout one's life, ultimately leading to financial well-being. This definition captures the multifaceted nature of financial literacy and goes beyond merely measuring knowledge to include the crucial aspect of practical application.

Practical Significance of Financial Literacy

Financial literacy and its importance have drawn interest among policymakers in the U.S. and globally (Xu & Zia, 2012). For example, according to Henegan and Mauldin (2015), "changes in the economy, such as the Great Recession and the shift from defined benefit retirement plans to define contribution plans, have led to increased research on financial literacy" (p. 279). We can trace the significance of financial literacy from the work of Bernheim (1998), who found evidence that financial knowledge is essential to household decisions. Over time, there has been an increase in World Bank initiatives and programs around financial literacy (Xu & Zia, 2012). The changing landscape of social welfare systems, evolving demographics, and the growing complexity and accessibility of financial services have collectively heightened the recognition of the importance of promoting financial literacy among citizens and consumers of all ages (OECD, 2014). As these societal shifts occur, there is a growing awareness that equipping individuals with financial literacy is essential to empower them in making informed and responsible financial decisions. With these changes in mind, ensuring widespread financial literacy has become a critical priority for policymakers and stakeholders to foster a financially resilient and well-informed population (OECD, 2014).

Contributors to Financial Literacy

Herd and Holden (2010) found that early-life financial education is a strong predictor of late-life financial knowledge. In contrast, Ward and Lynch (2019) suggest that Children in K-12 are generally not likely to see any positive effect of school-based financial literacy programs since they can rely on their parents. Lusardi (2008) found that individuals with low mortgage knowledge levels were individuals whose education and income levels were low. Brown (2009) found that financial literacy influences behavior change. Financially literate individuals perform better in budgeting, savings, and spending (Moore, 2003). This view also corresponds with Lusardi and Mitchell (2008) who argued that financial literacy is critical in planning for retirement.

Financial literacy is crucial in various financial decisions, including homeownership and retirement planning. Lusardi and Mitchell (2011) and Xu and Zi (2012) have shown a positive relationship between financial literacy and retirement planning. For many LMI households, inadequate knowledge of retirement planning can be attributed to their lower levels of financial literacy (Lusardi & Mitchell, 2011). Moreover, evidence suggests that individuals with lower financial literacy are less likely to save for retirement, hindering their ability to secure a financially stable future (Lusardi & Mitchell, 2008). The impact of financial literacy extends beyond retirement planning to other aspects of financial management. Lusardi and Mitchell (2007) and Lusardi and Tufano (2009) have highlighted how economically illiterate individuals exhibit negative attitudes toward savings, investing, and overall money management, which can impede their ability to accumulate wealth and achieve their financial goals.

Evidence consistently demonstrates the positive relationship between financial literacy and retirement planning. Almenberg and Säve Söderbergh (2011), Bucher-Koenen and Lusardi

(2011), Fornero et al. (2011), and Sekita (2011) all found strong associations between financial literacy and retirement planning in different countries, underscoring the global importance of this relationship (Xu & Zia, 2012). Additionally, financial literacy significantly impacts various financial decisions, including loan management patterns, savings, loans, and investments (Brown & Graf, 2013; Rooij et al., 2012). Individuals with higher financial literacy are better equipped to make informed choices regarding their financial well-being, including their ability to afford homeownership, manage debts effectively, and invest wisely.

Measuring Financial Literacy

No universally accepted way of measuring financial literacy has been developed to be applied in any socioeconomic context (Kumari, 2020). However, financial literacy has been measured across several empirical studies. For example, both performance tests and self-reported methods have been employed to measure financial literacy. Performance tests are primarily knowledge-based, while many self-reported measurements assess perceived knowledge or confidence in knowledge (Hung et al., 2009). Henager and Mauldin (2015) argued that "researchers need to continue to explore metrics that capture the financial literacy construct, one that is reflective of all income groups or those which are more appropriate for different income groups. Without better metrics it will be difficult to determine whether researchers are providing appropriate information to inform financial education programs or public policies" (p. 84).

Lusardi's (2019) contribution to measuring financial literacy goes beyond one country to include evidence worldwide. Lusardi and Mitchell (2008) proposed three questions as a tool to measure financial literacy using the concepts of interest rates, inflation, and risk, which are universally applicable in many contexts (Lusardi, 2019). The three concepts include "(1) numeracy as it relates to the capacity to do interest rate calculations and understand interest

compounding; (2) understanding of inflation; and (3) understanding of risk diversification"
(Lusardi, 2019, p. 1). Van Rooij et al. (2012) proposed two questions using economic concepts
of interest rates and inflation to measure basic financial literacy and more advanced financial
knowledge. Lusardi and Mitchell (2018), in their research using the big three questions, found
that a considerable portion of individuals, regardless of age, gender, education, and income,
demonstrated difficulty answering the questions correctly. The finding from their study was
consistent with other studies across the globe. This underscores the low level of financial literacy
in the U.S. and worldwide.

Socioeconomic and Demographic Factors Associated with Financial Literacy and

Homeownership

There is substantial evidence in the existing literature that homeownership is correlated
with demographic factors, including age, income, marital status, gender, household size, and race
(Fisher & Jaffe, 2003; Gan et al., 2014). Duca and Rosenthal (1994) and Bourassa (1995) show
that individuals between the ages of 30 and 54 years are more likely to be homeowners (Fisher &
Jaffe, 2003). Lauridsen and Skak (2007) found a high probability of males deciding to purchase a
home. Megbolugbe and Linneman (1993), in their study of determinants of homeownership,
found that age negatively correlated with homeownership. African Americans and Hispanic
homeowners are young and low-income (Megbolugbe & Lineman, 1993). Similarly, the 1990
United States Census statistics show that minorities and immigrants are less likely to be
homeowners (Atterhög & Song, 2009). DiPasquale and Glaeser (1999) argued that
homeownership is predicted in theory rooted in human capital theory. Hirad and Zorn (2001)
found that LMI households receiving education and counseling as part of pre-purchase

homebuyer counseling are less likely to default on their purchase or loan than those without such education and counseling before purchasing a home.

LMI Financial Decision Making

To understand the financial decision-making of LMI households, there is a need to explore the seminal work of Caskey (1994). Caskey (1994) provides valuable insights into LMI households' behavior and attitudes and the types of choices available to them. Barr (2008) suggests that the costs of different financial service choices and the nature of products and services offered to LMI households are the primary frameworks LMI households use to make financial decisions. Other studies found factors including low financial literacy (Lusardi, 2019) and availability of information likely to influence LMI financial decision-making (Belsky, 2013).

Traditionally, LMI households use formal and informal channels to conduct financial transactions and manage their financial lives (Barr, 2008). However, according to Barr (2008), "The financial services system does not serve LMI households well" (p. 3). LMI households incur relatively high fees, expensive credit, and generally high transaction costs. LMI households make optimal financial decisions based on their knowledge and information. They are constrained by certain limitations that result in choices, for example, buying a home instead of renting (Belsky, 2013).

LMI households typically live paycheck to paycheck with little room to save (Barr, 2008). This factor makes financial decisions more complex with limited choices. According to Barr (2008), "while access to credit can help households' smooth consumption, investment in human capital development, and build assets through homeownership and other investments, the inflated cost of credit presents another obstacle towards savings for low-moderate-income households" (p. 25).

Homeownership decisions are typically complex decisions that require an assortment of steps with ample information before the purchase (pre-purchase), during the purchase (in the process), and after the purchase (post-purchase). For example, we still need to determine what criteria people use in making such complex decisions, considering that financial results are probabilistic (Belsky, 2013). Thus, the decision to own or rent is "fundamentally shaped by people's propensity to make rational calculations about the true relative costs of owning and renting after controlling for returns to alternative investments of the funds used towards a down payment" (Belsky, 2013, p. 6).

LMI Household Homeownership

Homeownership has been at the epicenter of discussion among policymakers, academia, and the private sector for decades. In other words, owning a home is viewed by many people as a fulfillment of the American dream (Rohe et al., 2002). From a historical perspective, in the 1980s, several federal policies emerged to make homeownership accessible for low-income and minority families (Galster & Santiago, 2017). LMI household homeownership was a national priority during the Clinton Administration (Shlay, 2006). During this period leading to the mid-1990s, LMI household homeownership witnessed an unprecedented growth of 79% that drew national attention (Goodman & Mayer, 2018; Shlay, 2006). Among other reasons for making LMI homeownership a priority was the composition of homeownership by race, which is still disproportionate today (Agava et al., 2020). Current homeownership rates in California reveal 63% for White households compared to 34.4% for Black families and 44% for Latino households. This is compared to the nationwide average of 63.9% for all races, a significant disparity between Black and Latino households (Agava et al., 2020).

For LMI households, evidence shows owning a home has several social benefits, such as higher self-esteem and satisfaction (Rohe et al., 2002). Herbert and Belsky (2008) suggest that more than 50% of low-income buyers would only keep their homes for up to five years. Similarly, studies found that 50% of lower-income and minority families returned to renting instead of buying homes. This is shown to be related to the loss of jobs and income (Herbert & Belsky, 2008).

Homeownership Benefits

Homeownership represents a significant opportunity for LMI households to accumulate wealth. Herbert et al. (2013) argued that "the true golden rule of how to accumulate wealth through homeownership—is whether ownership is sustained over the long term" (p. 9). For LMI households, owning a home is essential to their portfolio (Herbert et al., 2013). However, some researchers have challenged this perspective. For example, whether homeownership is effective for asset building for LMI households remains debatable (Shlay, 2006). Herbert et al. (2013) argued that LMI and minority homeowners are likely to buy homes in poor condition and are likely to face "greater risks of high costs of maintenance and repair" (p. 12). Furthermore, LMI households are likelier to buy homes in neighborhoods where properties are not appreciating. Herbert et al. (2013) concluded that, despite the financial risks and other doubts cast on the benefits of LMI households owning a home, the benefits outweigh the risks because there may still be some gain instead of renting with no increase to realize.

Sherraden et al. (2019) emphasizes the necessity for families to accumulate resources: "For families to develop, it is necessary to accumulate resources for investments in education, skills, property, and enterprise" (p. 37). However, this resource accumulation is limited for LMI households, making asset building even more crucial for their progress. This points out the

importance of homeownership as an investment, but it acknowledges the risks and uncertainties associated with it. The HUD statement (2012) highlights that homeownership is not always a guaranteed profit, and homeowners can potentially face losses or lower returns compared to renting. Financial literacy becomes even more essential for LMI households, who often face limited resources and more significant financial challenges. Thus, understanding the risks and potential returns associated with various investment options, including homeownership, empowers individuals to navigate the financial landscape more effectively.

There is still an ongoing debate on whether homeownership benefits LMI households. According to Grinstein-Weiss et al. (2009), "Despite these new initiatives and the increased rates of LMI homeownership that have resulted, little evidence exists regarding the benefits of LMI homeownership" (p. 2). As noted earlier, Herbert and Belsky (2008) found non-financial benefits of homeownership. For example, they discovered that homeownership improves physical and psychological health. Other studies show that if homeownership positively affects parents' health and well-being, their children will equally benefit from such impact. This finding might not be generalizable to an urban setting like Los Angeles, where affordability is significantly low. It is worth noting that the unaffordability of housing in Los Angeles contributes to many factors, including reduced discretionary income that LMI households will use for their basic needs, such as health care expenses and transportation. (L.A. County Department of Public Health, 2015).

Homeownership Constraints in Los Angeles

Barriers to financing are a significant factor for LMI households (Agava et al., 2020). For example, institutional practices like predatory and discriminatory lending could play a barrier for LMI households to attain homeownership status. According to the Change Company report on expanding homeownership in LMI communities (2020), "In 2017, 19.3% of Black borrowers

and 13.5% of Hispanic borrowers were turned down for a conventional loan. At the same time, just 7.9% of White and 10.1% of Asian" (p. 4). Another factor is that low-down-payment loan options are substantially risky and costly, requiring mortgage insurance (Agava et al., 2020).

LMI households face significant challenges in accessing housing programs, exacerbating housing shortages and disparities. Despite various federal government initiatives aimed at promoting homeownership, there remains a disproportionate disadvantage for LMI households in benefiting from these programs. One such example is the New Deal-era reforms that were designed to support mortgage loans and expand homeownership opportunities. However, it is crucial to ensure that these programs effectively reach LMI households (Khouri, 2020).

Unfortunately, financial institutions often perceive LMI households as risky borrowers, leading to a reluctance in providing mortgage insurance and lending opportunities to certain LMI and minority groups. This further restricts access to housing finance and homeownership for these vulnerable households (Khouri, 2020). Addressing these disparities and improving access to housing programs for LMI households are essential steps in tackling housing challenges and promoting equitable homeownership opportunities. Several other demand constraints limit the ability of LMI households to achieve homeownership status. These may include, but are not limited to, loan-to-value ratio, credit score, debt-to-income ratio, and appraisal value. For example, banks and other financial service companies, including the Federal Housing Authority (FHA), all have standard conditions on borrowing that include minimum limits on the creditworthiness of the borrower that considers the income of the borrower, appraised value, or condition as well as the neighborhood of choice.

The Federal Reserve Bank of the U.S. underscored this perspective. Their findings reveal that banks have reduced lending to LMI households during 2016, particularly homeownership

lending (Bhutta et al., 2017). As a result, LMI households are exposed to predatory lending fueled by high-interest rates, high fees, and other financial pressures. The impact of reduced mortgage lending by large banks and other mortgage lenders on LMI is well documented in the literature. For example, Gete and Reher (2017) found lenders who experienced regulatory shocks following the Dodd-Frank Act have reduced lending significantly.

Theories

The Life Cycle Hypothesis (LCH) theory proposed by Modigliani and Brumberg (1954) posits that individuals organize their savings and consumptions in a pattern that sustains marginal utility over a lifetime. This theory is particularly important when it comes to wealth accumulation. The LCH theory emphasizes wealth accumulation over a lifetime. Homeownership is often considered an essential component of building wealth and financial stability. Financially literate individuals are more likely to recognize the wealth-building potential of homeownership and take steps to achieve this asset, thus aligning with the principles of the LCH theory. Warner (1989) suggested that income plays a pivotal role in saving, which stands as the most crucial determinant of saving in the current and future periods. The LCH theory assumes that individuals possess the requisite financial knowledge to make financial decisions by smoothing their savings and consumption patterns to optimize marginal utility at every point in their lifetime (Lusardi & Mitchell, 2014). However, some evidence shows that a limited percentage of the U.S. population possesses financial knowledge (Lusardi & Mitchell, 2014). This view was supported by Kozup and Hogarth (2008), who suggested that a lack of financial knowledge contributes to poor financial decisions. The recent financial crises have shed light on how poor financial decisions were made by many households that drew national attention (Despard et al., 2020; Kozup & Hogarth, 2008).

In their study, Hogarth and Anguelov (2003) proposed that saving is a function of a household's socioeconomic and demographic characteristics. They found that low-income Hispanic households were likelier to be savers than their white counterparts. Surprisingly, there was no difference between blacks and whites or other races and whites regarding saving (Hogarth & Anguelov, 2003). But on the other hand, Mauldin et al. (2016) suggested that several studies found differences in saving behavior or saving motivations by race and ethnicity (DeVaney et al., 2007; Hogarth & Anguelov, 2003; Perry & Morris, 2005; Rha et al., 2006; Xiao & Noring, 1994). Mauldin et al. (2016) found saving among LMI households to be low. They argued that there is a need to understand the factors contributing to low LMI savings.

The Permanent Income Hypothesis (PIH) assumes that individuals will tend to smooth their consumption over time, thereby consuming less if they expect their average long-term income to be less than their current income (Despard et al., 2020; Friedman, 1957). This theory is critical because it could also apply to short-term savings, one issue faced in low savings for LMI households (Despard et al., 2020; Lusardi & Mitchell, 2014). According to Despard et al. (2020), "Individuals may adjust their consumption and engage in the form of near-term precautionary saving, setting aside some portion of income or a windfall such as a tax return or work bonus that can be used to respond to unexpected income and expenditure shocks" (p. 2). Lack of resources and elevated income uncertainty are among the barriers to saving (Mauldin et al., 2016). Several other studies also found a strong correlation between financial security and demographic characteristics. For example, Browning and Lusardi (1996) found age to affect savings positively. Further, their finding showed that married people with no children have higher financial protection than married households.

Other reasons for the lack of LMI savings include scarcity of resources and uncertainty, the two principal factors that account for the lack of savings (Mauldin et al., 2016). Mauldin et al. (2016) suggested that having a primary purpose or goal is essential for preserving the future. For example, Fish and Anog (2012) indicated that households with motivation or plan to save for short-term and long-term retirement or emergency goals have a high probability of saving than those with no such cause. Mauldin et al. (2016) noted that past research should have included LMI households. Instead, they focused on "middle -and upper-income households and provided limited knowledge into the saving behavior of lower and moderate-income households" (Mauldin et al., 2016, p. 233). They proposed a framework incorporating behavioral factors, such as setting goals that negate saving to predict saving behavior (Mauldin et al., 2016).

Several other researchers found a relationship between savings and behavioral factors and saving. For example, Lunt and Livingstone (1991) found that fear or uncertainty motivated households to save. Individuals save as a precautionary measure by putting aside a small amount of money to curb future shocks. Along the same line of thinking, Lunt and Livingstone (1991) found psychological factors such as financial anxiety, financial satisfaction, obsession with money, and self-esteem predicts the amount households put aside as savings, reflecting on total savings influenced by demographic factors such as age.

Gaps Necessitating Further Research

Several studies have attempted to explain the close relationship between financial literacy and financial outcomes (Lusardi, 2021). Angrisani et al. (2021) argued,

> While the existing literature has documented racial/ethnic disparities in financial literacy, we still know relatively little about the determinants of such disparities and their relative importance for financial outcomes. Identifying the factors and mechanisms behind the

racial/ethnic gap in financial literacy is a critical step towards promoting financial

inclusion and more general economic well-being in the United States. (p. 525)

Lusardi and Mitchell (2018) found positive relationships between financial literacy, saving, asset

accumulation, and well-being, opening doors for increasing debate regarding financial literacy

and its relationship with other behavioral and attitudinal factors.

Past research on financial literacy has been focused on high-income households (Kumari,

2020). Furthermore, the relationship between financial literacy and other factors (financial

behavior and attitude) and LMI households holding a mortgage has been relatively understudied.

Therefore, this research uniquely targets LMI households in exploring the association between

their financial literacy levels and homeownership.

CHAPTER 3: RESEARCH DESIGN AND METHODS

Overview

This chapter delineates the methods employed for this study. The methodology used in the study is quantitative, which entails acquiring and analyzing quantitative data. The rationale for selecting this method is rooted in Edmondson and McManus's (2007) methodological fit framework. Both financial literacy and homeownership literature fall within a mature domain of literature; therefore, the study will rely on existing constructs and measures such as financial knowledge, financial capability, financial self-efficacy, and financial well-being to inform the research questions and analysis. One advantage of the quantitative method is that it protects against research bias and allows the research findings to be replicated by others (Creswell, 2014).

The study design and population description are extended, providing more details, and the sample sizes are specified. The data collection instruments utilized in this study extensively encompass detailed explanations of their administration and the validation process to ensure representativeness. The utilization of analytical techniques allowed for drawing robust inferences and arriving at conclusions based on the data collected fundamental and central issue in explaining LMI homeownership is understanding how potential home buyers develop appropriate financial behaviors and attitudes. So far, the literature clarifies that financial literacy is the most critical medium in developing attitudes congruent with the desire and ability to own a home. Financial literacy is a multidimensional variable that can be measured (Lusardi & Mitchell, 2014; Van Rooij et al., 2012), and higher levels of financial literacy positively enable people to make decisions about homeownership. There is a need to identify the diverse variables, factors, and contexts that shape how someone acquires financial literacy and, when they do, the

impact it has on financial attitudes and behaviors that influence the likelihood of qualifying for a mortgage.

This study's DV used to measure homeownership status is holding a mortgage. While, ideally, direct information on homeownership status (i.e., whether individuals own the house) would have been preferred, the available dataset only provided data on whether individuals held a mortgage. As a result, holding a mortgage was utilized as a proxy for homeownership. This approach is not uncommon and has been used in previous studies that analyzed homeownership patterns and mortgage-related behaviors. For instance, The US Census Bureau (2021) says that 63% of homeowners on the US have mortgages. While the study is unable to perfectly identify all homeowners, we know that everyone who has a mortgage is considered a homeowner.

By using holding a mortgage as the DV, this study can gain valuable insights into the financial behavior and decision-making of individuals who have taken steps towards homeownership. It enables us to explore the association between financial literacy and the likelihood of holding a mortgage, providing valuable implications for enhancing financial literacy interventions targeted at potential homeowners. Furthermore, this proxy variable allows us to investigate the impact of various socioeconomic factors on the probability of entering into a mortgage agreement, shedding light on the dynamics of homeownership in the context of diverse populations.

As with any proxy variable, there are limitations to consider. While holding a mortgage provides valuable information, it may not capture the complete picture of homeownership status, as individuals who own their homes outright without a mortgage would be categorized in the same group as those with a mortgage.

Theoretical Framework/Conceptual Framework

The skill of financial management, which is central to the operation of the modern market economy, requires knowledge in the form of financial literacy. The literature review primarily focused on developing a model that explains the relationship between financial literacy and the path to homeownership. One fundamental and central issue in explaining LMI homeownership is understanding of how potential home buyers hold and develop appropriate financial behaviors and attitudes. So far, the literature clarifies that financial literacy is the most critical medium in developing attitudes congruent with the desire and ability to own a home. Financial literacy is a multidimensional variable that can be measured (Lusardi & Mitchell, 2014; Van Rooij et al., 2012), and higher levels of financial literacy could enable people to make decisions about homeownership. Thus, there is a need to identify the diverse variables, factors, and contexts to give a comprehensive understanding of the complex relationships among factors including financial literacy, financial behaviors, and attitudes that influence the likelihood of qualifying for mortgage and homeownership. Figure 2 shows the theoretical framework of the study.

Figure 2

Theoretical Framework/Conceptual Framework
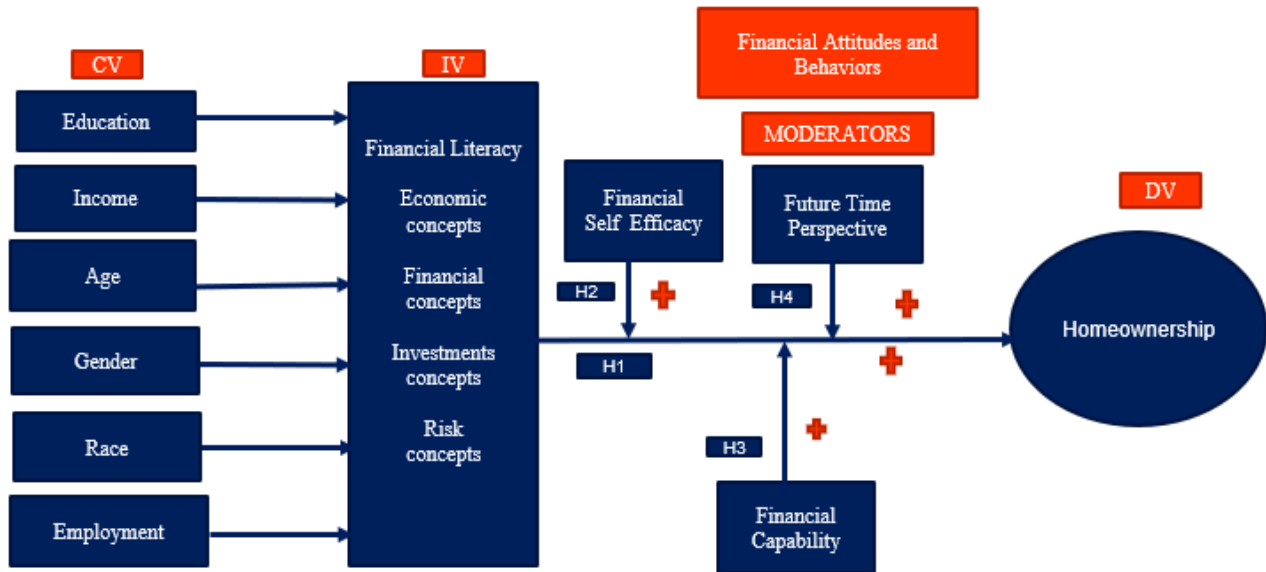
Statement of Hypotheses

In this study, the following hypotheses were formulated and tested:

- H1: Higher levels of financial literacy are associated with LMI households holding a mortgage.

- H2: Financial Self Efficacy strengthens the relationship between financial literacy and LMI households holding a mortgage.

- H3: Financial Capability strengthens the relationship between financial literacy and LMI households holding a mortgage.

- H4: Future Time Perspective (FTP) strengthens the relationship between financial literacy and LMI households holding a mortgage.

Research Design and Approach

The quantitative study design was employed by sourcing and analyzing secondary data. This framework estimated the relationships between the DV (LMI households holding a

mortgage) and the IV (financial literacy). The study employed an exploratory data analysis to understand the data, identify patterns, and gain insights into potential relationships between variables. Various statistical techniques such as logistic regression, moderation, and chi-square tests were used to analyze the relationships among variables. According to Welman and Kruger (2006), descriptive research is suitable when the research objectives involve determining the degree of association between variables and making predictions about the occurrences of phenomena under study. Additionally, the study explored the moderating effects of financial behaviors (financial self-efficacy and financial capability) and attitudes (future time perspective). The study included two phases (Phase I and II).

Phase I

Phase I aimed to identify pertinent variables and factors associated with financial literacy, with a subsequent focus on pinpointing the variables impacting financial literacy and delineating specific measures thereof. To achieve this, the proposed model's variables were operationalized using data collected as part of the Understanding America Survey (UAS), conducted by the University of Southern California (USC) over the 2015 to 2022 period. The data under scrutiny emanated from three waves of survey (refered to throughout as UAS 001, 121, and 237) administered over the 2015 to 2022 period. Moreover, the study extracted financial literacy indicators from the questions featured in these surveys.

The mapping strategy to identify sets of questions from the UAS surveys used to measure financial literacy and other vital constructs was developed based on varying definitions of financial literacy documented in the literature. I deemed it relevant and appropriate to use a behavioral approach to measuring financial literacy using a composite definition. The working definition of financial literacy for this study has been derived from Hung et al. (2009), who

conceptualized it as "knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being" (p. 12). Given the diverse range of interpretations surrounding financial literacy in existing literature, this definition is used to provide a more comprehensive and detailed elucidation of the concept.

Phase II

In this phase, the research delves into the relationship between financial literacy and LMI households holding a mortgage, a proxy for homeownership. With the establishment of financial literacy indicators in Phase I, the study proceeds to gauge the correlation between financial literacy and LMI households with mortgages. The UAS survey data were utilized to delineate the indicators, which subsequently form the foundation for operationalizing three variables related to financial behavior and attitudes (i.e., financial efficacy, financial capability, and future time perspective) as moderating factors.

Study Population and Sampling

Target Population

The research population encompasses households to which the findings and research implications will be extrapolated (Sampson, 2017). The target demographic identified herein comprises LMI households situated within Los Angeles County. The classification of LMI households, as defined by the Department of HUD, pertains to individuals earning 80% or less of the local area median income, specifically less than <$109,300 within Los Angeles County for the survey's period in 2022 (U.S. Department of Housing and Urban Development, 2003).

Sampling and Secondary Data Description

This research harnessed the publicly accessible UAS, encompassing a total of 7,388 targeted respondents across the U.S. Participants engaged with inquiries related to their financial behavior, financial literacy, financial planning, and cognitive abilities. The survey was administered online via the UAS website. For respondents requiring assistance with accessing the UAS website, supplementary outreach was conducted through mailed correspondence, available in both English and Spanish.

Participants who lacked an email address were contacted through traditional U.S. mail and were furnished with a login code, the provision of which also entailed securing their consent to partake in the survey. On average, the survey required approximately 16 minutes to complete. Of the targeted individuals, 6,309 respondents successfully concluded the study, reflecting a robust response rate of 85.4%. Among these participants, 558 hailed from Los Angeles County, identified via their respective zip codes. Additionally, 1,049 targeted respondents remained in progress, while 30 respondents had initiated but submitted incomplete surveys. The study encompassed individuals aged 18 and older, assuming roles as household decision-makers.

Table 4 provides an overview of select UAS surveys leveraged for this research, outlining field dates, thematic focus, and the response rate pertinent to this study. Codebooks, scoring information, response information, and data for the survey can be found in Appendix B.

Table 4

Selected UAS Survey Topics and Response Rates for Los Angeles County

Financial Literacy			LAC 2015-2020	
	Start	**End**	**No. Responses**	**Total Responses**
uas001	5/1/14	6/30/18	678	7,059
uas121	1/15/18	8/25/20	2,045	9,732
uas237	4/3/20	10/18/20	444	10,632
Financial Capability and Mortgage				
uas018	4/20/2015	3/23/2018	558	6,309
uas119	3/16/2018	4/14/2020	1,123	7,834
uas239	4/10/2020	6/14/2022	82	8,767

Sample Size and Power Analysis

The main sample for the research was drawn from the six UAS surveys resulting in participant counts of 678, 2045, 444, 558, 1,123, and 82, all hailing from Los Angeles County. These figures align with the intended target of 568 participants, as suggested by the G-power calculations.

The study employed binary logistic regression analysis to analyze the data. The determination of the sample size was guided by heuristic models, utilizing G-Power calculations. The dataset comprised responses from 2,098 participants (both homeowners and prospective homeowners) who participated in the UAS panel surveys.

Adhering to Hsieh et al.'s (1998) recommendation, a sample size of at least 150 was deemed essential for logistic regression, ensuring a minimum of 80% power at a significance level of 0.05. The sample obtained in the current study is higher than Hsieh et al.'s (1998) recommendation, indicating that there is enough power to carry out the analysis. The study employed a logistic regression model to examine moderation effects on the relationship between predictor variables (i.e., financial capability, financial self-efficacy, future time perspective) and

the outcome variable (holding a mortgage). Within the UAS survey, participants' financial competence was probed, seeking to assess their grasp of financial planning, spending, and saving. Respondents rated statements aligning with their understanding of money management, personal budgeting, and spending habits.

Data Collection Methods and Instruments

The empirical component of this dissertation research used an existing secondary data source. No primary data or direct contact with human subjects was collected for this study. To access the data, I had to complete an application that included an agreement form signed by me and my academic advisor. This agreement required me to respect participant privacy and confidentiality and to not attempt to re-identify UAS participants. Once registered, users are given access to CESR's collection of coded individual-level survey data, occasionally after a brief embargo. Table 5 shows the selected UAS surveys 2015-2022 with variables, field date, and the total national response rate for Los Angeles County.

Table 5

Selected UAS Surveys, 2015-2022

Survey	Variables	Field Date	Participants	Rate
UAS 18	Demographics,	05/2015 to	558	85.4%*
	Financial Capability,	03/2017**		
	Financial Efficacy,			
	Future Time Perspective,			
	LMI households holding a mortgage			
UAS 119*		March 16, 2018, to April 14, 2020	1123	87.45%*
UAS 239		April 10, 2020, to June 14, 2022	82	
UAS 001	Financial Literacy	August 27, 2014, to November 24, 2017	678	88.22%*
UAS 121**		January 15, 2018, to August 25, 2020	2045	88.92%*
UAS 237**		April 3, 2020, to October 18, 2020	444	88.87%*

Note: *Response rate represents nationally represented and L.A. County data at the time of the survey.

** Indicates dates that the surveys were closed. For UAS18, data was collected in batches on different participants over a period of three years (2015, 2016, and 2017).

*** UAS Survey119 is a continuation of UAS18, and UAS239 is a continuation of UAS119. It includes both participants that have taken UAS18 and new participants.

**** UAS Survey 121 was conducted after UAS001 with a larger sample, while UAS237 was the latest survey conducted in October 2020.

Construction of a Single Integrated Dataset

To appropriately obtain the variables that will lead to answering the research question, and operationalize the variables, this study went through a careful process of selecting the appropriate surveys to further form the basis for analysis. First, I mapped the key variables with each of the six selected surveys for the study. This process included using the theoretical framework to ensure that the variables in the study were addressed in each of the six surveys. Second, I leveraged Microsoft Excel to merge the six surveys to form one single integrated data set for the subsequent analysis. This process includes identifying each respondent by his or her UAS unique identification. Once a respondent was captured by his or her UAS ID, the ID across all surveys was used to ensure that the respondent participate in at least one or more surveys. Third, data cleaning was performed to ensure that all responses were captured. This effort was to improve data quality and mitigate the loss of sample size. This process also included derivation of appropriate excel formulae to ensure that all responses were captured, and all missing data were accounted for. Finally, I identified and confirmed scales and measurement methods from existing studies and determine whether the validated scales were robust and appropriate and could achieve desired reliability and validity.

Measures or Operationalization

Financial Literacy

Respondents interacted with 14 questions aimed at assessing their knowledge and proficiency in addressing fundamental economic, financial, risk, and investment concepts (Appendix E). This aligns with Lusardi and Mitchell's (2007) depiction of financial literacy as an understanding of "the most basic economic concepts needed to make sensible saving and investment decisions" (p. 36).

Financial Self-Efficacy

Financial Self-Efficacy holds a central position in Bandura's (1991) social cognitive theory. Bandura (1991) posited that individuals with high financial self-efficacy levels, characterized by their confidence in their ability to achieve a task, tend to embrace challenges rather than avoid them, and they are more likely to experience success in their endeavors. Financial Self-Efficacy is the level of confidence an individual displays in his ability not only to access and use financial products or services but also to make financial decisions and deal with unexpected financial events (Noor et al., 2020). Typically, individuals with high levels of financial self-efficacy tend to believe that they can accomplish difficult tasks and cope with challenging situations (Lown, 2011). Such recognition of financial self-efficacy leads to improved performance, cognitive thoughts, and motivation (Bandura, 1991).

In this study, financial self-efficacy is measured using a subset of questions from the items by taking the average scores of the three surveys and multiplying them by 10 to obtain the composite score. The score ranges from 0 (low financial self-efficacy) to 10 (high financial self-efficacy). For example, how well a person thrives when faced with a challenging financial situation, how confident are they about their financial management and future, how optimistic or pessimistic they about their end, and whether a person thinks in self-enhancing or self-debilitating ways (Farrell et al., 2016). In this study, an example of a self-efficacy question would be: "Please rate your confidence in making financial decisions compared to 5 years ago on a scale of 1 (More confident) to 3 (Less confident)". These questions are consistent with those found in the general Self-Efficacy Scale (GSE) developed by Schwarzer and Jerusalem (1995). Furthermore, individuals who possess high levels of general self-efficacy tend to exhibit greater success when faced with challenging situations compared to those with low self-efficacy (Park &

Folkman, 1997). It is noteworthy that financial self-efficacy and financial literacy are closely related constructs, and they can have a significant influence on each other. Financial self-efficacy refers to an individual's belief in their ability to successfully engage in financial tasks and make sound financial decisions. On the other hand, financial literacy refers to the knowledge and understanding of financial concepts and principles (Fernandes et al., 2014). Thus, including financial self-efficacy as a moderator could potentially bring insight into the idea that if individuals gain more financial knowledge and understanding of financial matters, they may feel more confident in managing their finances effectively and be able to confidently make homeownership decisions.

Financial Capability

Financial capability is managing finances and using financial services in various ways that best suit one's needs based on current social and economic conditions. According to a World Bank report (2018), financial capability as a construct includes individuals' knowledge, attitudes, skills, and behaviors in managing their finances to fit their needs. In this study, the questions used to measure financial capability targeted their capacity to budget, spend, and manage their financial stressors, consistent with the world bank's financial capability survey questions (Kempson et al., 2013). Appendix D contains a summary of items. The score ranges from 0 (low financial capability) to 10 (high financial capability). The inclusion of financial capability as a moderator in the study allows for a more nuanced examination of the link between financial literacy and holding a mortgage. It enables researchers to delve into how individuals' behaviors, attitudes, and skills, augment or interact with their financial literacy levels in influencing their likelihood of homeownership.

Future Time Perspective

Future time perspective measures how individuals think more about the future than the present or past (Jacobs-Lawson & Hershey, 2005). The construct has been applied in psychological studies and, more recently, in other fields like economics and financial planning. According to Jacobs-Lawson and Hershey (2005), future time perspective "is often referred to as one's level of patience, time preference, or planning horizon" (p. 333). In this study, questions on the planning horizon were captured in Appendix D, where respondents were asked questions such as, "In the last three years, did you retire or do planning for your retirement?" The approach in this study is consistent with other studies on financial planning and retirement saving. For example, Lusardi (1999) found that retirees with a short-term planning horizon tend to realize less income from retirement savings. The score ranges from 0 (low Future Time Perspective) to 10 (high Future Time Perspective). The interplay with knowledge and the skills to apply the knowledge positioned future time perspective as a potential moderator on the relationship between financial literacy and homeownership.

LMI Households Holding a Mortgage

The LMI households having a mortgage is the outcome variable in this study. As noted earlier, I used holding a mortgage as a proxy for homeownership. I was unable to perfectly identify all homeowners, but I knew that everyone that has a mortgage is considered a homeowner. The lack of available data to directly measure homeownership rates led to this choice. Despite such potential limitation of lack of data, employing holding a mortgage as a proxy for homeownership remains a valuable method to draw insights from the available data and explore the relationship between financial literacy and the likelihood of homeownership

among LMI households. The list of questions and items used in identifying people holding

mortgages are in Appendix D.

This study incorporates certain antecedent variables (i.e., education, age, gender, income,

and employment status) to predict the likelihood of LMI households holding a mortgage. This

comprehensive approach considers various factors such as individual decision-making capacity,

homeownership status, employment status, and household income. This nuanced and holistic

perspective of the intricate dynamics involved in mortgage-holding decisions among LMI

households.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

This chapter presents the findings derived from the analysis of the UAS survey data in this research. The variables examined in this study encompass demographic variables, financial literacy, financial capability, financial self-efficacy, and future time perspective.

The quantitative data analysis in the study includes descriptive statistics, psychometric testing, correlation analysis, logistic regression, and moderation. Collectively, the analysis estimates the relationships between the DV (LMI households holding a mortgage) and the IV (financial literacy) and explores the moderating effects of financial behaviors (financial self-efficacy and financial capability) and attitudes (future time perspective).

Preliminary Analysis

The data set in the study was subjected to a detailed review process to ensure the selection of appropriate surveys for the study. A series of computations were conducted, including income estimation and composite scores calculations for variables in the research: financial literacy scores, financial capability, financial self-efficacy, future time perspective, and holding a mortgage. I also performed a normality test to identify potential outliers.

A Cronbach's alpha test was performed to evaluate the financial literacy items' reliability. Additionally, a normality test was conducted to identify any anomalies in the data and confirm the absence of skewness. Given that the surveys were conducted at different times, a correlation check was carried out to examine the relationship between the variables across different survey waves. Binary Logistic Models were used to predict the probability of relationship between financial literacy and other demographic variables and holding a mortgage. This method was chosen considering the binary nature of the DVs. An overview of descriptive statistics can be seen in Table 6.

Table 6

Descriptive Statistics

Characteristic	Frequency	Percentage
Educational attainment		
High school diploma or less	130	14.86
In some colleges, no degree	261	29.83
Associate degree	78	8.91
Bachelor's degree	277	31.66
Professional Degree	10	1.14
Master's degree	103	11.77
Doctorate	16	1.83
Household Income		
Less than $30,000	543	26.01
$30,000–$59,999	726	34.78
$60,000–$99,999	540	25.84
$ 100,000 or more	281	13.45
Age		
18-39	562	26.87
40–49	343	16.39
50–59	221	10.56
60 or older	967	46.20
Gender		
Male	693	33.3
Female	1397	66.9
Race/ethnicity		
White non-Hispanic	1292	64.82
Black Non-Hispanic	181	9.16
Native American	123	6.18
Asian	247	12.47
Mixed	143	7.20
Hispanics non-White	1050	50.0
Employment		
Working	1213	63.92
Self-employed	68	3.58
Unemployed	234	12.34
Retired	188	9.90
Other	136	7.17
Mixed	58	3.06

Most of the respondents were White (64.82%) with frequency of 1,292. This is closely

followed by Hispanics (50%). It is essential to highlight that the Hispanic demographic data were

collected by UAS separately. Hispanic frequency was 1,050. This is followed by Asians

(12.47%), Blacks non-Hispanics (9.16%), Mixed (7.20%), and Native Americans (6.18%).

Therefore, although not likely a representative sample, all ethnic groups were represented.

The estimated household income of the respondents shows households that most respondents (34.78%) were in the income category of $30,000 - $59,999, followed by respondents in the low-income category of less than <$30,000 (26.01%). It is important to note here that the income estimation conducted considered the fact that there was limited data on the total household size of the respondents. Because of this, a total household size of 3.1 was used to capture the income limits that best defined LMI income using HUD's definition.

Financial Literacy

In this study, I assessed participants' financial literacy by evaluating their knowledge in three primary areas: economic concepts (e.g., interest rates and inflation), financial concepts (e.g., saving), and investment concepts (e.g., stocks and bonds) (Lusardi & Mitchell, 2014). To ensure accuracy and discourage guessing, participants were given the option to choose the correct answer or indicate "I don't know" if uncertain.

To determine respondents' financial literacy levels, I combined the correct responses from three UAS surveys (UAS 001, UAS 121, UAS 237) across 14 questions. A higher financial literacy score indicated a greater understanding of financial matters, which was consistent with findings from prior studies on financial literacy (FINRA-NFCS, 2022; OECD, 2011; OECD/INFE, 2015; Ranyard et al., 2020; PNAS, 2019). To generate a comprehensive measure of financial literacy, I calculated a single composite score. This approach accounted for cases where respondents took the financial literacy test on multiple occasions. As such, the overall financial literacy score could vary from 0 to 14, the total number of answers across all assessments. Table 7 showcases a summary of participant responses to these questions.

Table 7

Participant Responses to Financial Literacy Items

Statements	Correct %	Incorrect %
FL_001. Suppose you had $100 in a savings account, and the interest rate was 2% per year. After five years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102, or less than $102?	83.1	16.9
Fl_002. Suppose you had $100 in a savings account, and the interest rate was 20% per year, and you never withdraw money or interest payments. After 5 years, how much would you have on this account?	56.9	43.1
FL_003. Imagine that the interest rate on your savings account was 1% per year, and inflation was 2% per year. After one year, would you be able to buy more than, the same as, or less than today with the money in this account?	64.1	35.9
Fl_0044. Assume a friend inherits $10,000 today, and his sibling inherits $10,000 3 years from now. Who is richer today because of inheritance?	56.4	43.6
FL_005. Suppose that in the year 2020, your income has doubled, and the prices of all goods have doubled too. In 2020, will you be able to buy more, the same, or less than today with your income?	75.3	24.7
FL_d001. Which of the following statements describes the main function of the stock market?	52.2	47.8
FL_p001. If the interest rates (rise/fall), what should happen to bond prices?	29.6	70.4
FL_p002. Do you think the following statement is true? Buying a (single company/stock mutual fund) usually provides a safer return than a (single company/stock mutual fund).	36.4	63.6
FL_p003. Do you think that the following statement is true or false? (Stocks/Bonds) are normally riskier than (stocks/bonds).	39.0	61.0
FL_p004. Considering a long period (for example, 10 or 20 years), what normally gives the highest return? (Stocks or bonds)	46.3	53.7
FL_p005. Normally, which asset described below displays the highest fluctuations over time: savings accounts, bonds, or stocks?	68.5	31.5
FL_p006. When an investor spreads his or her money among different assets, does the risk of losing a lot of money increase, decrease, or stay the same?	56.0	44.0
FL_p007. Is the following statement true? Housing prices in the U.S. can never go down.	82.6	17.4

Financial Capability

      In this study, I selected five items from the financial capability construct to evaluate the financial behavior of the respondents. The approach used for calculating the items involved a simple average (composite score) without applying any weighting, aligning with the methodology consistent with the Financial Capability Barometer (FCB) (OECD/INFE, 2022). These selected items primarily centered around the respondents' spending, saving, and borrowing behaviors, offering valuable insights into their financial capabilities. To provide a comprehensive view, Table 8 presents the mean and standard deviation of the respondents' financial capability. Additionally, the options that participants were required to select can be found in Appendix F.

Table 8

Financial Capability Items Descriptive Statistics

Statement	N	Mean	SD
Do you currently have a checking or savings account?	861	9.58	0.19
Please think about the bills that you get regularly or every month (such as utility bills and your mortgage or rent). How many of your regular bills do you pay with automatic bill payment, that is, having payments taken directly from your bank account by these companies every month without you having to schedule the payment?	836	2.48	54.11
How do you typically pay your credit card bills?	763	7.21	0.26
Payday loans are small, short-term loans that must be paid in full when the borrowers receive their next paycheck or other regular deposit (such as a Social Security payment). These loans are often paid with a post-dated check. Please select the following statement that best describes your situation regarding these products.	857	9.21	0.25

Table 8 presents descriptive statistics related to participants' usage of financial services and their payment preferences. For the checking account question, the mean score for this was 9.58, reflecting a high likelihood of participants having a checking or savings account. For the automatic bill payment question, a total of 836 participants responded to this question and the mean score for this statement was 2.48. Of note, the high standard deviation of 54.11 indicates substantial variability in the number of bills paid through automatic payment. For the credit card bills question, a mean score of 7.21 indicates that participants often use traditional payment methods for credit card bills. The low standard deviation of 0.26 suggests a consistent trend in

payment methods. For the payday loans question, a mean score of 9.21 suggests limited involvement with payday loans. The standard deviation of 0.25 reflects a relatively uniform trend in responses related to payday loan engagement.

Based on the responses obtained from the three surveys (018, 119, and 239), participants' financial capability was coded into different categories, reflecting their levels of financial capability. The Financial Capability (FCScore) is the composite score (average) of the three surveys, calculated by multiplying the average scores of the three surveys by 10. The FCScore ranges from 0 (indicating low financial capability) to 10 (representing high financial capability. The following specific questions were used to code the respondent's financial capability:

- "Do you currently have a checking or savings account?"
  - Responses were coded as 1 for "Yes" and 0 for "No."
- "Please think about the bills that you get regularly or every month..."
  - Responses were coded as follows: Low = 0 if B13 = 5 or 6, Medium = 0.5 if B13 = 3 or 4, High = 1 if B13 = 1 or 2
- "How do you typically pay your credit card bills?"
  - Responses were reverse scored as follows: FC = 1 (High) if B20 = 1, FC = 0.67 (Medium) if B20 = 2, FC = 0.33 (Low) if B20 = 3, and FC = 0 if B20 = 4 or 5.
- "Payday loans are small, short-term loans that..."
  - Responses were coded as follows: FC_LWM_PDL = 1 if B24 = 1 or 6 (indicating a high level of financial capability in relation to payday loans). FC_LWM_PDL = 0 if B24 = 2, 3, 4, or 5 (indicating lower financial capability in relation to payday loans).

By employing these coding methods, I was able to classify participants into different levels of financial capability based on their responses to the specific survey questions. This allowed for a more nuanced understanding of the participants' financial behaviors and decision-making, providing valuable insights into their overall financial capability.

Financial Self-Efficacy (Financial Attitude)

The Financial Self-Efficacy items in this study were designed to measure the respondents' confidence in their ability to make sound financial decisions and whether they sought assistance in paying their bills. These items were measured using the methodology adopted by the OECD International Network on Financial Education (INFE) to assess financial attitudes. For a comprehensive overview, Table 9 presents the descriptive statistics of the items utilized to measure financial self-efficacy. Moreover, the options provided to the participants for responding to these items can be found in Appendix F, providing additional context and details.

Table 9

Financial Self-Efficacy Items Descriptive Statistics

Statement	N	Mean	SD
Did you determine if you have/had enough money to retire	861	0.46	0.20
If someone has given you money to help you pay your bills, have you received more or less help recently than you did 3 years ago	637	6.73	0.42
Compared to 5 years ago, how confident do you feel in your ability to make financial decisions	637	5.81	0.44

Table 9 comprises three statements related to participants' financial attitudes and perceptions, including their retirement preparedness assessment, financial assistance changes, and self-confidence in making financial decisions. Regarding the retirement question, the mean

score was 0.46, indicating low confidence in retirement preparedness. The second question asked about receiving help with bills. The average score for this statement was 6.73, indicating a positive average level of financial support. The final question asked participants about their confidence level in making financial decisions. The average score for this statement was 5.81, reflecting a moderate level of self-confidence in financial decision-making abilities.

The Financial Self-Efficacy (FSEScore) is the composite score of the three surveys (018, 119, and 239), calculated by multiplying the average scores of the three surveys by 10. The FSEScore ranges from 0 (indicating low financial self-efficacy) to 10 (representing high financial self-efficacy). To code specific questions related to financial self-efficacy, the following were used:

- If someone has given you money to help you pay your bills, have you received more or less help recently than you did 3 years ago?
  - *FSE_GMPB=1 if FSE_b42=1; FSE_GMPB=0 if FSE_b42=2,3,4.*
- Compared to 5 years ago, how confident do you feel in your ability to make financial decisions?
  - *FSE_Confidence=1 if FSE_b52=1, FSE_Confidence=0 if FSE_b52=2,3*
- Did you determine if you have/had enough money to retire?
  - *FSE_EMTR=1 if 2; 0 if 1, 3.*

While there is no specific cutoff score for assessing financial self-efficacy, this score has important implications for how respondents cope with adverse financial circumstances (Lown, 2011). Those with low confidence in implementing recommended financial tasks may require role modeling and confidence-building in addition to financial capability education.

Future Time Perspective (Financial Attitude)

Future Time perspective items focused on two statements: planning for retirement and deciding on a savings goal. Table 10 shows the descriptive statistics for these questions and Appendix F provides more in-depth details.

Table 10

Future Time Perspective Items Descriptive Statistics

Statements	N	Mean	SD
In the last 3 years, did you retire or do planning for your retirement?	134	5.92	0.41
In deciding how much of your family's income to spend or save, people are likely to think about different financial planning periods. In planning your family's saving and spending, which of the following time periods is more important to you (and your spouse/ and your partner)	728	1.30	0.34

Table 10 summarizes the descriptive statistics for the financial planning and decision-making items. The table includes two statements that capture participants' engagement in retirement planning and their preferences for financial planning periods. The retirement planning question captures participants' recent engagement in retirement activities over a three-year period. The mean score for this statement was 5.92, indicating a moderate level of activity related to retirement planning. The second question, regarding savings rate, assessed participants' preferences for specific time periods when considering family income allocation. The mean score for this statement was 1.30, suggesting a tendency towards placing higher importance on shorter-term financial planning periods.

The Future Time Perspective (FTP) score is calculated as the composite score of three surveys (018, 119, and 239), obtained by multiplying the average scores by 10. The FTP score ranges from 0 (low Future Time Perspective) to 10 (high Future Time Perspective). To assess the FTP score, specific questions were coded as follows:

- In the last 3 years, did you retire or do planning for your retirement?

  - *FTP_PFR=1 if FTP_b39=1 AND respondent is NOT retired; otherwise, FTP_PFR=0.*

- In deciding how much of your family's income to spend or save, individuals prioritize different planning periods.

  - *FTP_FPP=1 (High) if FTP_b40b2 =5 or 6; FTP_FPP=0.67 (Medium) if FTP_b40b2=3 or 4; FTP_FPP=0 (Low) if FTP_b40b2=1 or 2.*

In summary, the findings indicate that many respondents have not actively planned for retirement, but a significant proportion demonstrates a long-term future time perspective when making financial decisions. The FTP score provides a comprehensive measure of future orientation for further analysis and interpretation.

Correlation Analysis

The composite variables of each of the five constructs in the study were utilized to conduct a correlation test. This analysis aimed to confirm a robust relationship among these variables, which are crucial to financial literacy, financial capability, financial self-efficacy, and future time perspective.

Correlations for Financial Literacy

The correlation analysis conducted on the items that formed the financial literacy construct in my study revealed positive correlations. Specifically, the six key variables focused

on respondents' knowledge of economic concepts related to interest rates and inflation. This

suggests a significant association among these items, indicating a shared underlying construct

related to a financial understanding regarding interest rates and inflation. Individuals who cannot

correctly calculate interest rates borrow more and accumulate less wealth (Lusardi & Tufano,

2009; Stango & Zinman, 2009). The financial literacy items are questions that are jointly put to

test of knowledge about stocks, stock mutual funds, and of risk diversification.

The correlation is consistently positive, reinforcing the importance of knowledge in

participating in financial markets. Furthermore, this is consistent with several other studies in the

U.S. and other parts of the world, that more financially literate individuals are more likely to

participate in financial markets and subsequently invest in stocks and bonds (Lusardi & Mitchell,

2014). Table 11 shows the correlations for each of the financial capability items.

Table 11

Correlations for Financial Capability Items

	Have a checking or savings account	Pay with automatic bill payment	Pay your credit card bills	Payday loans
Have a checking or savings account.	1			
Pay with automatic bill payment.	.099**	1		
Pay your credit card bills	.003	.041	1	
Payday loans	.105**	.193	.281**	1

Note. **Correlation is significant at the 0.01 level (2-tailed).

Table 11 shows all the financial capability variables are positively correlated. These

items also gauge individuals' use of financial services, products, and services to manage their

daily finances. In terms of financial capability, individuals' ability to leverage financial services and manage their finances is fundamentally important. This is consistent with Kempson et al. (2013) who highlighted the importance of budgeting, savings, and spending within limits, particularly in how respondents pay their bills.

The study explores how frequently respondents use automatic bill payment to settle their bills and examines their experience with payday loans, including whether they currently have payday loans, had them in the past, or are considering obtaining one. Payday loans are associated with high costs due to their elevated interest rates, and failing to make payments on time can result in substantial fees. Consequently, regularly scheduling automatic payments may serve to prevent late payments and mitigate the accumulation of fees (Lusardi & Mitchell, 2014). Similarly, the strong correlation between payday loans and payment of credit card bills demonstrates that these financial behaviors/beliefs tend to go together. Paying credit card bills in full to avoid high-interest rates, and with borrowing at high-interest rates, respondents that pay the minimum payment score low on the composite score. The correlation in this study shows that the ability to manage finances by adopting the right financial behaviors, such as paying credit card bills in full, could yield better financial outcomes.

Respondents saving behavior in this study is captured by whether they have a savings account and how effectively they can balance saving and spending. Many studies found individual savings habits to be determined by their budgets and how they balance spending and saving (Loke, 2015; Lusardi & Michell, 2005).

Correlations for Financial Self-Efficacy

Table 12 shows the correlations among financial self-efficacy items.

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Table 12

Correlations of Financial Self-Efficacy Items

	Have/had enough money to retire	Help you pay your bills	Ability to make financial decisions
Have/had enough money to retire	1		
Help you pay your bills	.121**	1	
Ability to make financial decisions	-.033	.067*	1

Note. **Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

The correlation for retirement and paying bills (0.12) is positive. The response indicates participants were confident in managing their finances. Similarly, the correlation between making financial decisions and paying bills (0.07) is statistically significant, suggesting a positive relationship between having enough money to pay bills and the ability to make sound financial decisions. The correlation between retirement and ability to make financial decisions suggests no significant relationship.

Assessing individual confidence about their lives, few studies in the past have tested the explanatory power of financial self-efficacy. For example, an attempt by Dietz and Haurin (2003) to apply an explanatory variable to explore the use of retirement plans has proved less than successful simply because the scale contained three items based on the Pearling global mastery scale, which does not explicitly measure self-efficacy (Lown, 2021).

Based on the recommendation of Schwarzer and Jerusalem (1995), there is no specific cutoff score for assessing financial self-efficacy. In this study, I have combined items that include having enough money to pay bills, confidence in the respondents' ability to make financial decisions, and whether the respondents have determined that they have enough money to retire by taking the average of the three items responses to form a single composite score that measures financial self-efficacy. This measurement method focuses on tasks related to the financial management behaviors of the respondents (Hoge et al., 2017). Furthermore, the use of this method represents the age group in the study who are primarily adults are those making spending plans, credit use, and concerned about retirement (Lown, 2011).

Correlations for Future Time Perspective

Table 13 shows the correlations among future time perspective items.

Table 13

Correlations of Future Time Perspective Items

	Retire or planning to	Planning your family's saving and spending
Retire or planning to	1	
Planning your family's saving and spending	-.229[**]	1

Note. ** Correlation is significant at the 0.01 level (2-tailed).

The analysis reveals a statistically significant correlation between the two constituent variables that form the construct of FTP. Notably, this correlation exhibits a negative relationship

between retirement planning, and respondents' outlook on future financial considerations, specifically their strategies for balancing saving and spending.

This negative correlation prompts us to delve deeper into the dynamics at play. While a negative correlation suggests an inverse relationship between these two variables, it is crucial to further explore the implications of this association. In this context, it raises intriguing questions about how retirement decision-making underpins financial behavior. It is interesting to wonder if the perception of future planning tendencies aligns with the broader perspective on financial planning and the delicate equilibrium between saving and spending. In essence, this negative correlation invites us to consider the intricate interplay between an individual's forward-looking mindset concerning retirement and their approach to managing financial resources in the present. As such, this finding prompts a richer exploration of the complex decision-making processes that underpin individuals' financial behavior and their perception of the future.

Correlations for the Five Primary Constructs

Table 14 shows the correlations among the five primary constructs used in the study.

Table 14

Correlations of the Five Primary Constructs

	SC_HAM	FLScore	FCScore	FSEScore	FTPScore
Hold a mortgage (SC_HAM)	1				
Financial Literacy (FLScore)	.141[**]	1			
Financial Capability (FCScore)	.075**	.405[**]	1		
Financial Self-Efficacy (FSEScore)	.024	.143[**]	.250[**]	1	
Future Time Perspective (FTPScore)	.043	.282[**]	.174[**]	.293[**]	1

Note. ** Correlation is significant at the 0.01 level (2-tailed).
 *Correlation is significant at the 0.05 level (2-tailed).

The correlation between financial literacy and holding a mortgage (0.14) highlights a positive relationship between these two variables, suggesting that financial literacy plays a role in mortgage decisions. This finding suggests that individuals with higher financial literacy possess the necessary knowledge, particularly in economic concepts like interest rates, enabling them to comprehend and interpret the terms and conditions present in mortgage agreements. This outcome aligns with prior research on financial literacy, demonstrating its significance in navigating financial interactions with institutions (Huston, 2010; OECD, 2010; Remund, 2010). Furthermore, all the moderating variables, financial capability (0.07), financial self-efficacy (0.02), and future time perspective (0.04) were all correlated with holding a mortgage. However, only financial capability was significant.

Furthermore, financial literacy exhibits positive correlations with all other variables, including financial capability (0.41), financial self-efficacy (0.14), and future time perspective (0.28). These favorable associations underscore the importance of assessing respondents' financial literacy, behaviors, and attitudes, as they can influence financial decision-making and, in this context, the likelihood of homeownership or holding a mortgage. Overall, these findings underscore the role of financial literacy in shaping individuals' financial choices and outcomes.

In this section, I am re-stating the hypotheses that form the foundation of the research investigation. These include

- H1: Higher levels of financial literacy are associated with LMI households holding a mortgage.

- H2: Financial Self Efficacy strengthens the relationship between financial literacy and LMI households holding a mortgage.

- H3: Financial Capability strengthens the relationship between financial literacy and LMI households holding a mortgage.

- H4: Future Time Perspective (FTP) strengthens the relationship between financial literacy and LMI households holding a mortgage.

The hypotheses serve as the guiding framework, directing the focus toward the specific relationships I aim to explore between the predictor variables (financial literacy) and the outcome variable (holding a mortgage). As I progress through the regression analysis, I will rigorously examine the evidence supporting or against each hypothesis, ultimately contributing valuable insights to the field and enhancing the understanding of the underlying dynamics governing the phenomenon under investigation.

Logistic Regression Analysis

This research aimed to assess the factors associated with LMI households holding a mortgage in Los Angeles County, focusing on the influence of financial literacy. To achieve this primary objective, I employed two regression methods: enter and stepwise. The enter method allowed me to assess the influence of all critical variables on LMI holding a mortgage. On the other hand, the stepwise regression helped identify the most significant predictors among the variables considered. First, I will first report the findings from the enter method, which comprehensively assesses the factors associated with holding a mortgage. Subsequently, I present the results of the stepwise regression, which aids in identifying the most influential predictors within the set of variables. In each step, additional variables were entered into the model to assess their contribution to the model prediction.

By analyzing and comparing the results from both regression methods, I aim to gain a deeper understanding of the factors that play a critical role in LMI holding a mortgage and more evidence of the specific contribution of financial literacy and its association with holding a mortgage.

Logistic Regression of Financial Literacy and Holding a Mortgage

The results of the regression analysis for financial literacy and the DV (holding a mortgage) are summarized in Table 15.

Table 15

Logistic Regression for Financial Literacy and Holding a Mortgage

		β	S.E.	Wald	df	Sig.	Exp(β)
Step 1[a]	FLScore	.095	.015	41.039	1	<.001	1.100
	Constant	-.451	.121	13.825	1	<.001	.637

Note. a. variable (s) entered on step 1: FLScore.

In the regression model using the Enter method and one predictor, the FLScore variable, there was a significant association with holding a mortgage (Step 1a). FLScore demonstrated a positive coefficient of 0.095 (SE = 0.015), indicating that for each unit increase in FLScore, there was a corresponding increase of 0.095 in the likelihood of holding a mortgage (Wald = 41.039, df = 1, p < .001). The odds ratio (Exp (β)) associated with FLScore was 1.100, suggesting that the odds of holding a mortgage increased by 10.0% for each unit increase in FLScore. This result, when compared with the result from other methods of regression, particularly the stepwise method, is consistent with the result obtained using Enter. The Omnibus tests from the stepwise regression showed statistically significant results at each analysis step, indicating that the regression model predicts the DV (holding a mortgage). The Chi-square values for Step 1, Block, and model were 41.92 and all p-values at <.001 which suggests that the predictor in the model contributes to explaining the variance in the DV. In terms of the assessment of the model fit, the -2-log likelihood of the analysis was 2826.86. This indicates the overall fit of the regression model. The pseudo-R-squares (Cox & Snell and Nagelkerke) represent the proportion of variance explained in the model; these results reported proportions of 0.02 and 0.027, respectively. Therefore, these results collectively suggest that the regression model accounts for a small proportion of the variance in the DV (holding a mortgage). Like the Enter method, the stepwise results are statistically significant.

Logistic Regression for Age and Holding a Mortgage

The results of the logistic regression with only age as a predictor and holding a mortgage as the DV revealed a statistically significant relationship. Table 16 shows the regression results of age and holding a mortgage.

Table 16

Logistic Regression for Age and Holding a Mortgage

		β	S.E.	Wald	df	Sig.	Exp(β)
Step 1[a]	C_age	.008	.003	8.841	1	.003	1.008
	Constant	-.071	.125	.318	1	.573	.932

Note. a. Variable(s) entered on step 1: C_age.

These results suggest that for every one-unit increase in C_age, the likelihood of holding a mortgage increased by 1.008, indicated by Exp (B) in Table 16.

Logistic Regression for Hispanics and Holding a Mortgage

Table 17 shows Hispanics and holding a mortgage regression analysis results.

Table 17

Logistic Regression for Hispanics and Holding a Mortgage

		β	S.E.	Wald	df	Sig.	Exp(β)
Step 1[a]	C_Hispanic	-.227	.089	6.602	1	.010	.797
	Constant	.392	.063	38.396	1	<.001	1.479

Note. a Variable(s) entered on step 1: C_Hispanic.

C_Hispalatino had a coefficient of -0.227, indicating a negative relationship with holding a mortgage (SC_HAM). The relationship between C_Hispalatino is statistically significant. This result indicates that individuals that are Hispanic/Latino are less likely to hold a mortgage, relative to non-Hispanics, evidenced by the odds ratio (Exp(B)) = 0.797) that is associated with Hispanic/Latino. This means that the odds of the DV occurring will decrease by 20.3% for being a Hispanic, relative to other ethnic origins.

Logistic Regression of Multiple Variables on Holding a Mortgage

I explored the complex interplay between financial literacy, financial self-efficacy, financial capability, future time perspective, and a set of demographic variables, including household income, age, education, ethnicity, gender on holding of a mortgage. The primary objective is to utilize logistic regression analysis to examine how these factors influence the likelihood of holding a mortgage. With this approach, I aim to gain valuable insights into the predictors or determinants of homeownership decisions and shed light on the role of financial knowledge, attitudes, and socio-demographic variables influencing homeownership.

The Omnibus tests from the stepwise regression showed statistically significant results at each analysis step, indicating that the regression model predicts the DV (holding a mortgage). The Chi-square values for Step 1, Block, and model were 92.14 and all p-values at <.001 which suggests that the predictors in the model contributes to explaining the variance in the DV. In terms of the assessment of the model fit, the -2-log likelihood of the analysis was 1652.31. This indicates the overall fit of the regression model. The pseudo-R-squares (Cox & Snell and Nagelkerke) represent the proportion of variance explained in the model; these results reported proportions of 0.07 and 0.09, respectively. Therefore, these results collectively suggest that the regression model accounts for a small proportion of the variance in the DV (holding a mortgage).

Table 18 summarizes the results of the regression analysis by including all the predictor variables (i.e., Financial Literacy, Financial Self-Efficacy, Financial Capability, Future Time Perspective, Household Income, Education, Hispanic/Latino, and Gender) and holding a mortgage in the regression using Enter method.

Table 18

Logistic Regression for All Predictors on Holding a Mortgage

		β	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	FLScore	.083	.029	8.138	1	.004	1.086
	Age	.014	.005	9.308	1	.002	1.014
	Gender(1)	-.202	.134	2.295	1	.130	.817
	Race			2.191	5	.822	
	White	.262	.226	1.343	1	.246	1.300
	Black	-.057	.277	.042	1	.838	.945
	American Indian	.192	.197	.948	1	.330	1.211
	Asian	-.068	.388	.030	1	.862	.935
	Hawaiian/Pacific Islander	-.030	.237	.016	1	.898	.970
	employment(1)	.289	.131	4.846	1	.028	1.336
	Hispanic/Latino	.443	.154	8.312	1	.004	1.558
	Income	.000	.000	15.479	1	<.001	1.000
	Education			6.710	7	.460	
	High school(1)	.254	.195	1.694	1	.193	1.290
	Associate college degree/voc. (2)	.380	.265	2.054	1	.152	1.463
	Some college no degree(3)	-.008	.280	.001	1	.978	.992
	Masters' degree(4)	.276	.209	1.736	1	.188	1.318
	Bachelor's degree(5)	.140	.249	.318	1	.573	1.151
	Professional degree(6)	1.133	.587	3.722	1	.054	3.104
	Doctoral degree(7)	.089	.446	.040	1	.842	1.093
	FSEScore	-.023	.022	1.088	1	.297	.977
	FCScore	-.016	.037	.184	1	.668	.984
	FTPScore	-.003	.022	.015	1	.904	.997
	Constant	-1.269	.309	16.915	1	<.001	.281

Note. a. Variable(s) entered on step 1: FLScore, Age, Gender, Race, Employment, Hispanic/Latino, C_hhincome, Education, FSEScore, FCScore, FTPScore.

The logistic regression results reveal interesting findings. The financial literacy score demonstrated a positive coefficient (β) of 0.08. The odds ratio (Exp(β)) of 1.086 suggests that higher levels of financial literacy are associated with an increased likelihood of holding a mortgage. Conversely, the coefficient of income was 0.00, with a standard error of 0.00. With the coefficient and SE both being 0.000, the relationship appears to be flat, and the odds ratio (1.00) indicates a negligible impact on the likelihood of holding a mortgage with a one-dollar increase in income.

To address this, household income was transformed using a natural logarithm, resulting in a new variable (hhincome_transformed) used for the logistic regression. The results show an increased coefficient value (β = 0.15) for transformed household income, with SE = 0.08 and Wald statistics of 3.568, indicating a positive association between income and the DV. The p-value of 0.059 suggests marginal significance.

Age was found to be statistically related to holding a mortgage. The coefficient value (β=0.014) and odds (Exp(β)) of 1.014, with a p-value of 0.002, indicate a strong statistically significant relationship. Similarly, Hispanic/Latino exhibited statistical significance in the logistic regression model. The odds ratio (Exp(β)) of 1.558 suggests that Hispanics have 55.8% higher odds of holding a mortgage compared to individuals from other racial categories. It is important to note that Hispanic data was collected separately in the UAS, and treated as a distinct variable from other races in the analysis. Furthermore, education with a professional degree was found to be associated with holding a mortgage.

In summary, the logistic regression results indicate meaningful relationships between financial literacy, household income (transformed), age, Hispanic ethnicity, and education (professional degree) with the likelihood of holding a mortgage. These findings contribute

valuable insights to the understanding of various factors influencing mortgage ownership among the respondents in the study. However, the marginal significance for some variables warrants further investigation and consideration in the overall interpretation of the results. In other words, the logistic regression model shows a strong fit to the data, and the predictor variables collectively contribute significantly to explaining the variation in the DV.

To enhance the interpretability of the logistic regression results and increase the effect of household income, I applied a natural logarithm transformation. This transformation, denoted as hhincome_transformed, allowed for a more meaningful assessment of the relationship between income and the DV. The results of this transformed variable and its impact on the model's findings can be seen below in Table 19.

Table 19

Logistic Regression with Transformed Household Income Variable

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	FLScore	.086	.030	8.206	1	.004	1.089
	Age	.013	.005	8.361	1	.004	1.013
	Education			7.040	7	.425	
	Highschool(1)	.257	.197	1.710	1	.191	1.294
	Associate College Degree /Voc.(2)	.368	.267	1.901	1	.168	1.445
	Some College no Degree(3)	-.003	.281	.000	1	.990	.997
	Master's Degree (4)	.289	.210	1.888	1	.169	1.335
	Bachelor's degree(5)	.209	.248	.709	1	.400	1.232
	Prof. Level Degree(6)	1.263	.585	4.666	1	.031	3.537
	Doctoral Degree (7)	.170	.445	.146	1	.703	1.185
	Employment (1)	.297	.132	5.033	1	.025	1.346
	Gender(1)	-.184	.134	1.893	1	.169	.832
	Race			1.773	5	.880	
	White (1)	.240	.226	1.127	1	.288	1.272
	Back(2)	-.061	.279	.048	1	.827	.941
	American Indian(3)	.168	.196	.736	1	.391	1.183
	Asian(4)	-.055	.390	.020	1	.888	.947
	Hawaiian/Pacific Islander5)	-.016	.237	.005	1	.946	.984
	Hispanic/Latino	.406	.154	6.980	1	.008	1.501
	Financial Self-Efficacy	-.015	.025	.383	1	.536	.985
	Financial Capability	-.018	.038	.226	1	.634	.982
	Future Time Perspective	.010	.030	.115	1	.734	1.010
	Transformed_income	.268	.083	10.569	1	.001	1.308
	FLScore *FSEScore	-.006	.008	.604	1	.437	.994
	FCScore *FLScore	.001	.012	.011	1	.916	1.001
	FLScore* FTPScore	-.003	.009	.083	1	.773	.997
	Constant	-3.707	.895	17.144	1	<.001	.025

Note. a. Variable(s) entered on step 1: FLScore * FSEScore , FCScore * FLScore , FLScore * FTPScore.

The findings indicate that higher levels of education, specifically professional studies, are associated with holding a mortgage, indicated by a high odds ratio of 3.537. This means that

individuals that attained a professional degree have a 253.7% times higher likelihood of holding a mortgage than the rest of the other education categories, holding all things constant. On the other hand, gender and all the moderating variables did not reveal a statistically significant association with the DV.

To capture a comprehensive understanding of the factors influencing homeownership and holding a mortgage among LMI households in Los Angeles County, I employed two separate logistic regression models to compare the results based on income limits. The use of income limits is crucial to ensure that the analysis focuses specifically on households falling within the designated LMI category. LMI income limits were based on the Los Angeles County guidelines for 2022, where households earning 80% or less of the local area median income ($109,300) were considered LMI (Appendix B). Therefore, approximately 49.52% of the 2,090 participants fall within the income bracket of less than or equal to $110,000. By utilizing these specific income limits, I sought to pinpoint the dynamics among financial literacy, financial behaviors, and financial attitudes among LMI households holding a mortgage in Los Angeles County.

First, a logistic regression was performed with the household income of the entire data set. In this model, financial literacy is significantly associated with holding a mortgage ($\beta = .086$, $SE = 0.03$, $p = 0.004$) which suggests that individuals with higher financial literacy scores were more likely to hold a mortgage. Household income, or transformed household income using natural logarithm (Ln), revealed a marginally significant relationship with holding a mortgage. This result, particularly the positive coefficient value, indicates that higher household income may be associated with a higher likelihood of holding a mortgage.

Age ($\beta = 0.013$, $SE = 0.005$, $p = 0.004$) and Hispanic/Latino ($\beta = 0.406$, $SE = 0.15$, $p = 0.008$) continued to suggest a significant association with holding a mortgage in the model. On

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the contrary, gender was not statistically significant, which further suggests that there is no association between gender and holding a mortgag. On the other hand, financial capability, financial self-efficacy, and future time perspective also did not show significant association with the holding a mortgage. Overall, this logistic regression analysis using the household income of the entire data set without an income limit has reinforced the significant relationships between financial literacy and other demographic variables, including age, Hispanic / Latino identity, household income, and holding a mortgage.

In comparison, when household income, which was transformed, was added in the regression model, the inclusion of the income limit (up to $110,000), I expect some results that may be different from the model with the entire data set income. The results of the regression analysis in the model with transformed household are shown in Table 20.

Table 20

Logistic Regression using Los Angeles County LMI Household Income Limits

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	FLScore	.097	.029	11.068	1	<.001	1.102
	Age	.013	.005	8.571	1	.003	1.014
	Education2			8.087	7	.325	
	High school(1)	.292	.195	2.234	1	.135	1.339
	Associate college degree /voc.(2)	.415	.265	2.453	1	.117	1.515
	Some college no degree(3)	-.025	.279	.008	1	.929	.976
	Master's degree(4)	.326	.209	2.446	1	.118	1.386
	Bachelor's degree(5)	.211	.247	.729	1	.393	1.235
	Professional degree(6)	1.236	.587	4.443	1	.035	3.443
	Doctoral degree(7)	.193	.446	.187	1	.666	1.212
	Employment(1)	.359	.128	7.818	1	.005	1.432
	Gender(1)	-.200	.134	2.235	1	.135	.819
	Race			1.682	5	.891	
	White(1)	.218	.226	.931	1	.335	1.243
	Black(2)	-.073	.276	.069	1	.793	.930
	American Indian(3)	.155	.196	.623	1	.430	1.167
	Asian(4)	-.119	.388	.095	1	.758	.887
	Hawaiian/Pacific Islander(5)	-.042	.237	.031	1	.859	.959
	Hispanic	.427	.154	7.693	1	.006	1.533
	FSEScore	-.005	.025	.041	1	.839	.995
	FCScore	-.009	.038	.060	1	.806	.991
	FTPScore	.008	.030	.070	1	.791	1.008
	hhincome_LMI	-.556	.170	10.700	1	.001	.574
	FLScore *FSEScore	-.008	.008	.883	1	.347	.993
	FCScore*FLScore	-.003	.012	.063	1	.801	.997
	FLScore *FTPScore	-.004	.009	.225	1	.635	.996
	Constant	-.431	.347	1.542	1	.214	.650

a. Variable(s) entered on step 1: FLScore * FSEScore , FCScore * FLScore , FLScore * FTPScore.

In this model, using the Los Angeles household income limits, financial literacy (β = 0.097, SE = 0.029, df =1, $p < .001$) was statistically significant, further suggesting that higher levels of financial literacy are associated with holding a mortgage. This finding further indicates that individuals with higher financial literacy scores have a higher likelihood of holding a mortgage, demonstrated by the odds ratio ($Exp(\beta)$) =1.102.

Age is statistically significant, suggesting a positive association with holding a mortgage. These results indicate that older individuals are likely to hold a mortgage. The result of Hispanic/Latino revealed that individuals with Hispanic/Latino identities are more likely to hold a mortgage demonstrated by the coefficient value (β = 0.427) and odds ratio of 1.533, suggesting a statistically significant relationship. The results of the transformed income variable (β = -0.556, SE = 0.170, p = 0.001) suggest that a negative association with holding a mortgage that is statistically significant. The negative coefficient on household income may indicate specific challenges within the middle-income range. While high-income households have more significant financial resources to purchase homes, and low-income households can benefit from targeted government programs that subsidize housing costs, middle-income households may face several challenges in the housing market. These challenges include a shortage of affordable entry-level homes, rising home prices that outpace income growth, limited access to credit and down payment assistance, and competition from investors and cash buyers (Reeves, 2020).

As a result, many moderate-income households are unable to build wealth through homeownership and are less likely to hold a mortgage. The rest of the moderating variables in the model were not statistically significant, just like in the model with the entire data set.

The logistic regression model has a -2-log likelihood value of 1655.87, which means that the model's fit to the data is evaluated based on this measure. The Cox & Snell R-squared value

of 0.066 indicates that the model explains about 6.6% of the variation in the DV. Similarly, the Nagelkerke R-squared value of 0.089 suggests that the adjusted model explains approximately 8.9% of the variation in the DV. Keep in mind that both R-squared measures are relatively low, indicating that the model may not fully capture the complexity of the relationship between the predictors and the DV. It is essential to consider additional factors or potentially refine the model to improve its explanatory power. Additionally, assessing the significance of individual predictor variables and their contributions to the model is crucial for drawing meaningful conclusions.

Table 25 shows that financial literacy is associated with holding a mortgage. The coefficient associated with financial literacy in the model is 0.097 which means that for every one-unit increase in financial literacy, the odds of holding a mortgage increase by a factor of 1.106 (i.e., exp (0.097) = 1.102). In other words, if financial literacy increases by one unit, the odds of holding a mortgage increase by 10.2%. Alternatively, if the financial literacy increases by 1.4 points, which represents 10% of the total maximum score (14), the odds of holding a mortgage increase by a factor of 1.15 (i.e., (0.097*1.4) = 0.1358). This means that financial literacy corresponds to a 13.6% increase in the odds of holding a mortgage.

Moderation Analysis

The moderation analysis sought to investigate the underlying mechanism through which financial literacy influences the decision to hold a mortgage. The primary objective was to determine whether certain moderator variables, namely financial self-efficacy, financial capability, and future time perspective, strengthen the relationship between financial literacy and holding a mortgage.

To begin the analysis, the study outlined a set of hypotheses based on insights from previous research and the theoretical framework. Firstly, it was hypothesized that higher levels

of financial literacy are associated with holding a mortgage (H1). However, it was further posited

that this direct effect would be subject to moderation by financial self-efficacy (H2), followed by

moderation by financial capability (H3), and future time perspective (H4).

By conducting the moderation analysis and examining the interaction effects of these

variables, the study aimed to gain a comprehensive understanding of the complex relationship

between financial literacy and mortgage holding. The findings from this investigation may

contribute valuable insights to the field of financial decision-making and provide practical

implications for promoting informed financial choices related to mortgages and homeownership.

Summary of Hypotheses

Hypothesis 1

The study hypothesized that higher levels of financial literacy would be associated with

LMI households holding a mortgage. The results from the regression analysis provided

compelling evidence to support H1, indicating a positive and statistically significant association

between financial literacy and LMI households holding a mortgage.

In the multivariate regression model, the findings revealed a significant positive

relationship between financial literacy and mortgage holding ($\beta = .086$, $SE = 0.03$, $p = 0.004$).

Similarly, in the univariate logistic regression model, the association remained significant,

showing a beta coefficient of 0.09. These results unequivocally support H1, demonstrating that

higher levels of financial literacy are indeed linked to an increased likelihood of LMI households

holding a mortgage. Moreover, the Chi-square test results further bolster the relationship

between financial literacy and holding a mortgage. The significant Chi-square test indicates that

the observed relationship between financial literacy and mortgage holding is unlikely to be due

to chance, adding robustness to the findings.

These outcomes carry valuable implications for policymakers, financial educators, and practitioners seeking to improve financial outcomes for LMI households. By recognizing the importance of financial literacy in facilitating financial decisions pertaining to homeownership or holding a mortgage, targeted interventions and educational programs can be designed to enhance financial knowledge and empower individuals and families to make informed choices about homeownership.

Overall, the empirical evidence presented in this study provides strong support for the notion that higher financial literacy levels positively impact the likelihood of LMI households holding a mortgage, underscoring the significance of promoting financial literacy initiatives.

Hypothesis 2

In this study, it was posited that financial self-efficacy would enhance the relationship between financial literacy and the likelihood of LMI households holding a mortgage. However, upon analyzing the data and conducting the analysis, the results did not support this hypothesis.

The statistical findings revealed that there was no significant influence or effect on the relationship between financial literacy and holding a mortgage through the moderator variable (FSEScore). In other words, the study did not find support for the notion that a stronger belief in one's confidence in making his or her financial decision (Financial Self-Efficacy) enhances the impact of financial literacy on the decision to hold a mortgage for LMI households. Furthermore, suggesting that the relationship between financial literacy and holding a mortgage remains statistically significant even in the presence of financial self-efficacy as a moderator.

Figure 3, as a graphical representation of the moderating effect of financial self-efficacy on the relationship between financial literacy and holding a mortgage, can offer a visual understanding of the interaction between these variables. Figure 3 shows how the relationship

between financial literacy and holding a mortgage varies at different levels of financial self-efficacy. It might reveal whether the impact of financial literacy on mortgage holding becomes stronger or weaker as financial self-efficacy increases or decreases.

Figure 3

Moderation of Financial Self-Efficacy on Financial Literacy and Holding a Mortgage

Direct Effect: $\beta = 0.086$, $p = 0.004$
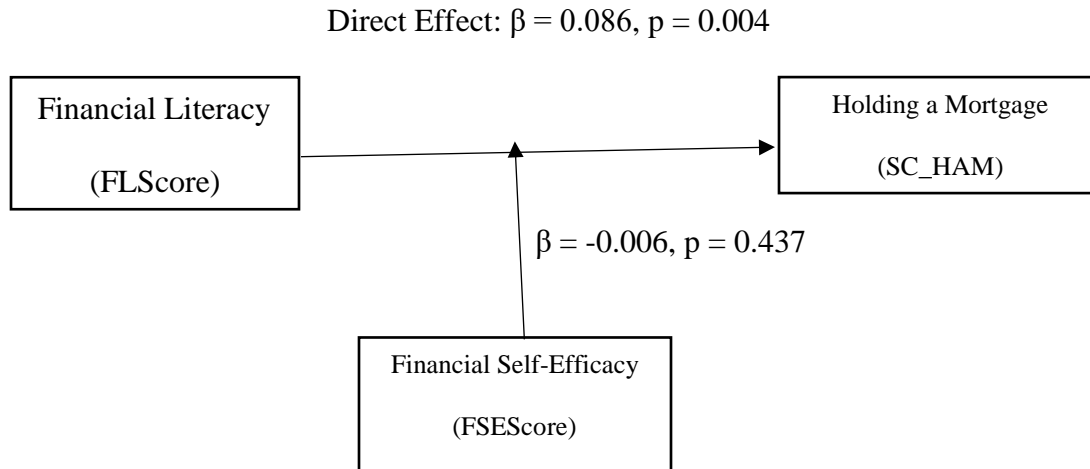
The negative or non-significant results contribute to the broader understanding of financial decision-making and the interplay between financial literacy, financial self-efficacy, and mortgage choices.

Hypothesis 3

H3 was formulated based on existing research, particularly the findings from the FINRA survey in 2021, which suggested that financial capability would strengthen the relationship between financial literacy and the likelihood of holding a mortgage. However, upon analyzing the data and conducting the moderation analysis, the results indicated that financial capability as a moderator did not have a statistically significant effect on the relationship between financial literacy and holding a mortgage. These results indicate that the presence of financial capability as a moderator did not strengthen the relationship between financial literacy and mortgage holding.

Despite this non-significant moderation effect, the study observed that the direct effect of financial literacy on holding a mortgage ($\beta = 0.086$) remained statistically significant. This suggests that even in the presence of financial capability as a moderator, financial literacy still plays a significant role in influencing the decision to hold a mortgage.

The non-support of H3 in the data does not diminish the significance of the results; rather, it provides valuable insights into the complex dynamics of financial decision-making. The interplay between financial literacy, financial capability, and holding a mortgage is a multifaceted process that warrants further investigation and potential refinements in understanding. The non-significant effect of financial capability as a moderator indicates that the relationship between financial literacy and holding a mortgage does not significantly change based on the level of financial capability. This finding highlights the need for more in-depth exploration of how these factors collectively impact the financial behaviors of individuals and households. Understanding the specific mechanisms through which financial capability interacts with financial literacy and mortgage decisions can lead to a more comprehensive understanding of the decision-making process.

Although H3 was not supported by the data, the results remain valuable as they shed light on the intricate interplay between financial literacy, financial capability, and mortgage holding. The non-significant effect of financial capability as a moderator highlights the need for continued research to refine the understanding of these relationships. These findings can be instrumental in guiding future research and policy interventions aimed at improving financial outcomes for individuals and households. Figure 4 shows a representation of the moderation of financial capacity on the relationship between financial literacy on holding a mortgage.

Figure 4

Moderation of Financial Capability on Financial Literacy and Holding Mortgage

Direct Effect: $\beta = 0.086$, $p = 0.004$

Financial Literacy
(FLScore)

Holding a Mortgage
(SC_HAM)

$\beta = 0.001$, $p = 0.916$

Financial Capability
(FCScore)
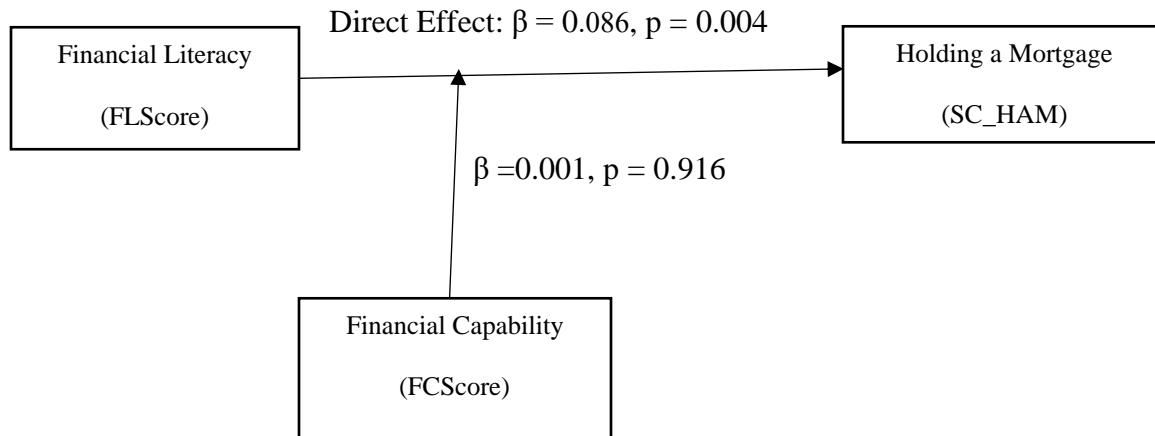
Hypothesis 4

In this study, the hypothesis was that future time perspective would strengthen the relationship between financial literacy and the likelihood of holding a mortgage. However, upon analyzing the data and conducting the moderation analysis, the results indicated a non-significant effect on the relationship between financial literacy and holding a mortgage. The non-significant moderating effect of future time perspective on the relationship between financial literacy and mortgage holding suggests that other factors may play a more influential role in shaping this relationship. The absence of a significant interaction between financial literacy and future time perspective indicates that the impact of financial literacy on mortgage holding is not significantly affected by individuals' future time orientation. To gain a more comprehensive understanding of the complexities involved in the decision-making process of holding a mortgage, further research and investigation into additional variables are warranted.

Furthermore, the results demonstrated that the relationship between financial literacy and holding a mortgage remains statistically significant even in the presence of future time perspective as a moderator. The direct effect of financial literacy on holding a mortgage was found to have a coefficient value of $\beta = 0.086$, $p = 0.004$, indicating a significant relationship.

The study did not find support for H4. These results highlight that the direct effect of financial literacy on mortgage holding is robust and significant, indicating the importance of financial literacy as a predictor of homeownership decisions, irrespective of future time perspective. These findings emphasize the need for continued exploration and refinement of theories related to financial behaviors. Understanding the intricate mechanisms that underlie financial decision-making is crucial for developing effective financial education programs and policies that can empower individuals and households to make informed choices about homeownership and other financial matters.

Figure 8 shows the moderation of future time perspective on the relationship between financial literacy and holding a mortgage, as well as the direct effects of financial literacy on holding a mortgage.

Figure 5

Moderation of Future Time Perspective on Financial Literacy and Holding a Mortgage

Direct Effect: $\beta = 0.086$, $p = 0.004$

| Financial Literacy (FLScore) | | Holding a Mortgage (SC__HAM) |

$\beta = -0.003$, p-value of 0.773

| Future Time Perspective (FTPScore) |
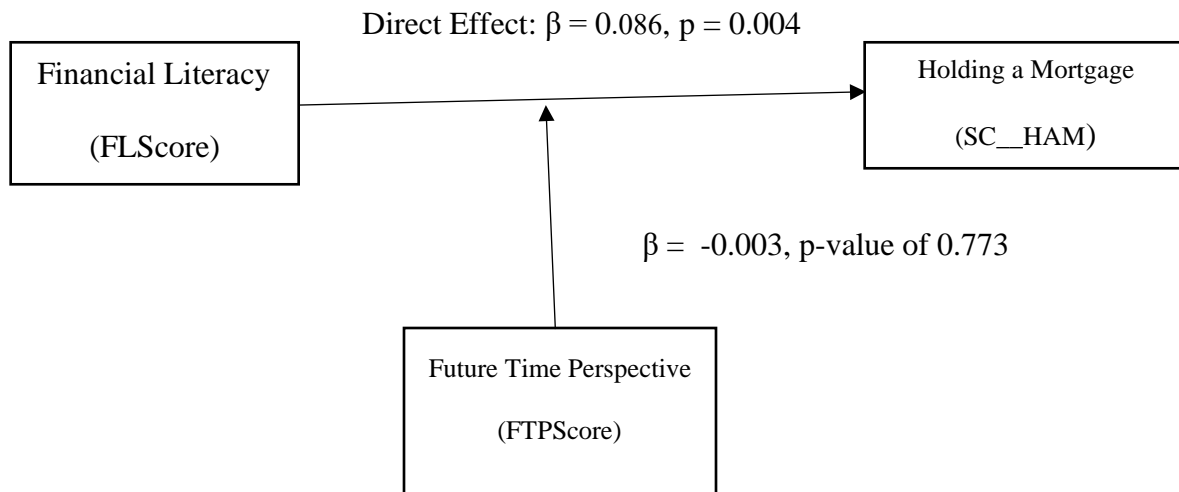
Interaction Effects

In this study, I explored the interaction effect of financial literacy and financial capability in predicting the likelihood of holding a mortgage. As neither financial literacy nor the interaction term (FCScore * FLScore) demonstrated a statistically significant relationship with the DV, I can conclude that the interaction effect between financial literacy and financial capability does not play a significant role in predicting mortgage holding behavior. To visually represent the interaction effects, Figure 6 provides a graphical depiction of the relationship between financial literacy and financial capability in predicting holding a mortgage.

Figure 6

Interaction of Financial Literacy by Financial Capability on Holding a Mortgage
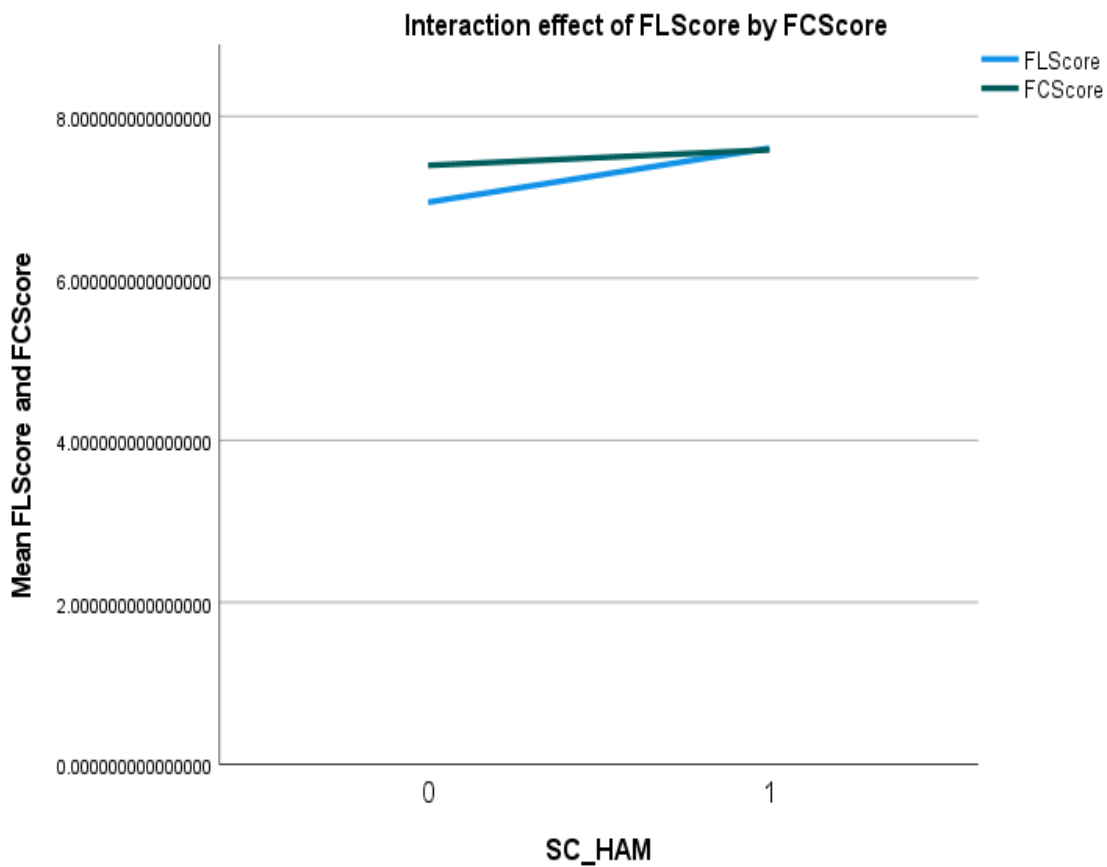
Similarly, financial self-efficacy and the interaction term (FLScore * FSEScore) are not significant predictors in this interaction model. Figure 7 illustrates the interaction between financial literacy and financial self-efficacy in predicting holding a mortgage.

Figure 7

Interaction of Financial Literacy and Financial Self- Efficacy
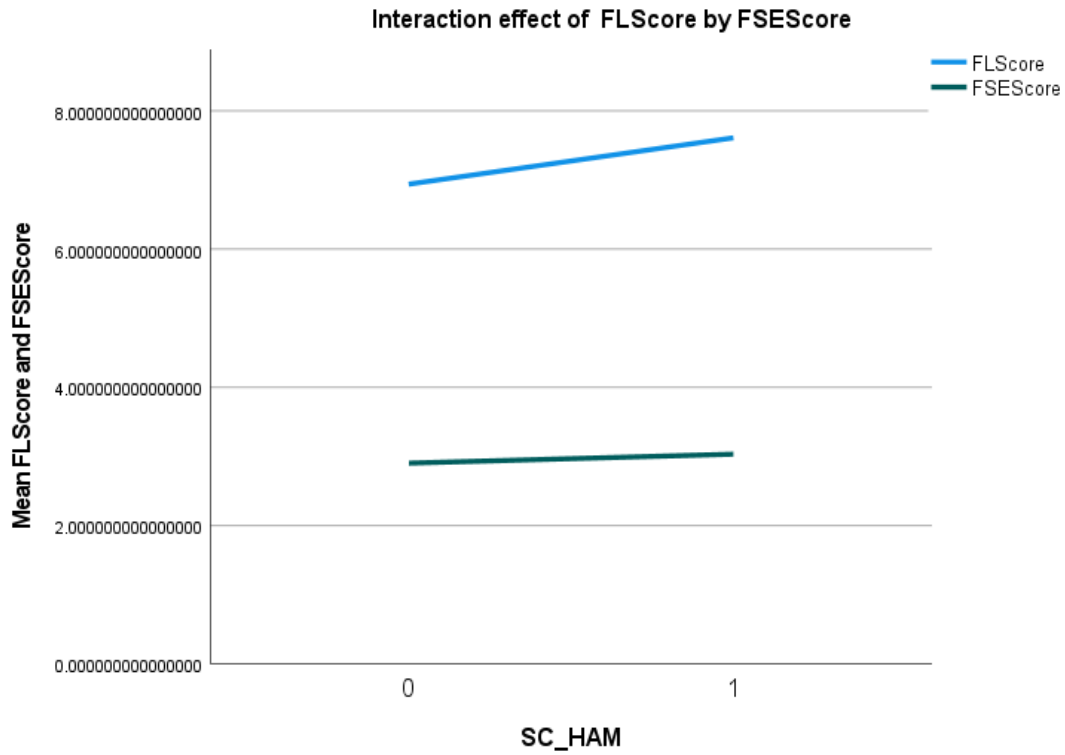
Furthermore, the relationship between future time perspective and holding a mortgage is not statistically significant even in the presence of interaction term (FLScore * FTPScore). Figure 8 shows the graphical representation of the interaction effect in predicting holding a mortgage in the model.

Figure 8

Interaction of Financial Literacy and Future Time Perspective
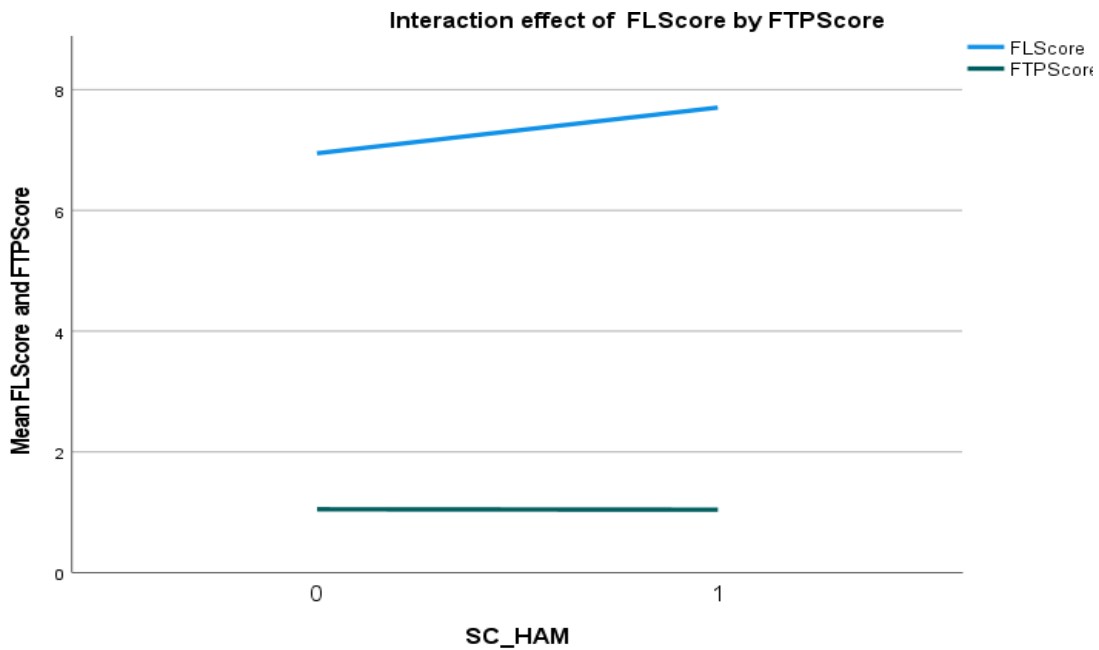
Robustness Check

To test the robustness of the research findings, I conducted a series of analyses that included, but were not limited to, transforming the household income to LMI Los Angeles County income limits for 2022 ($91,300). The aim was to ensure the stability and reliability of the findings and conclusion. I used the new household income variable to perform a logistic regression analysis, including other variables in the model. The results were consistent with the original household income that included the entire data set, indicating that individuals that score higher in financial literacy and within the income <$110,000 have a higher likelihood of holding a mortgage, further supporting H1.

To perform the moderation analysis with all moderator variables, I first checked on partial moderation, where all moderation was conducted with each variable at a time in the

model. The results were consistent with moderation when all the moderating variables were in the model. Financial literacy remained a statistically significant predictor of the DV, which further confirmed that higher literacy levels are associated with holding a mortgage. The results also confirmed that financial capability, financial self-efficacy, and future time perspective did not significantly moderate the relationship between financial literacy and holding a mortgage.

To further ensure the robustness of the research findings, I performed a Chi-square. I examined the relationship between financial literacy and holding a mortgage. The results of the Chi-Square showed consistent patterns of association between financial literacy and holding a mortgage. This analysis demonstrated the stability of the finding and further supported the research hypothesis that higher levels of financial literacy are associated with holding a mortgage. A chi-square test of independence showed that there was a significant association between financial literacy and holding a mortgage, $X2$ (67) = 90.60, p = .029.

Reliability Analysis

The Cronbach's Alpha test for financial literacy scores 0.786 based on 14 survey questions (42 items). This indicates a high level of internal consistency for the financial literacy variables used for this survey. All 14 items revealed a score greater than 0.70. Thus, removing questions does not indicate that the survey is unreliable, as shown in Table 21.

Table 21

Financial Literacy Item Deleted-Total Statistics

	Cronbach's Alpha if Item Deleted
FL_l001	.772
FL_l002	.778
FL_l003	.760
FL_l004	.774
FL_l005	.784
FL_d001	.768
FL_d002	.763
FL_p001	.788
FL_p002	.787
FL_p003	.786
FL_p004	.771
FL_p005	.756
FL_p006	.757
FL_p007	.773

Findings

This chapter presents the key findings derived from the logistic regression and moderation analyses conducted to explore the factors influencing the likelihood of LMI households holding a mortgage and the potential moderating roles of financial capability, financial self-efficacy, and future time perspective in this relationship.

The results from the logistic regression reveal a significant positive relationship between financial literacy and the likelihood of holding a mortgage. This finding suggests that higher levels of financial literacy are associated with an increased propensity for mortgage holding among LMI households.

Logistic regression analysis encompassing various IVs including financial literacy, financial self-efficacy, financial capability, future time perspective, household income, age,

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education, Hispanic/Latino identity, and gender indicates that higher levels of financial literacy are significantly associated with a higher likelihood of holding a mortgage. Household Income also exerts a significant influence on mortgage holding, underscoring its essential role.

A statistically significant finding emerges with individuals possessing a Professional degree displaying a higher likelihood of holding a mortgage. Moreover, individuals identifying as Hispanic/Latino exhibit a higher propensity for mortgage holding in both regression models. Finally, age and employment status emerge as consistent predictors of mortgage holding.

Broader Implications and Contributions

The findings contribute to a comprehensive understanding of financial behaviors among LMI households, shedding light on the intricate interplay between financial attitudes, behaviors, and homeownership. These insights are promising for informing policy, financial education initiatives, and promoting positive financial outcomes for underserved populations.

In the Chapter 5, the implications of these findings will be further explored, discussing practical strategies and initiatives. The study's contribution to LMI financial decision-making and homeownership dynamics will be addressed comprehensively, along with avenues for future research and policy implications. The aim is to leverage these findings to advance financial inclusion, stability, and positive outcomes for individuals and communities.

CHAPTER 5: DISCUSSION

In this dissertation, I have explored the complex dynamics of the relationships among financial literacy, financial behaviors, financial attitudes, and LMI households holding a mortgage in Los Angeles County. Considering the comprehensive research and analysis presented, this chapter aims to give a concise and holistic overview of the essential findings and contributions made in the context of the research problem and questions, leading to a conclusion. By providing a summary of the ultimate outcomes, highlighting their significance, and addressing the research objectives, this conclusion offers a vital element in understanding the study's broader implications and its potential impact on individuals, banks, and other financial services institutions, as well as policy intervention programs.

It is important to note that existing studies on financial literacy have been well-documented in the U.S. and worldwide (Lusardi, 2019; Lusardi & Mitchell, 2014; Moore, 2003). There still needs to be a greater understanding of the relationships among factors, including financial literacy, financial behaviors, financial attitudes, and holding a mortgage. The findings in this study show that socioeconomic and demographic characteristics help explain an individual's financial literacy and ability to hold a mortgage. Furthermore, the findings show that financial literacy, age, household income, individuals who identify as Hispanic, and professional degree level are significantly associated with holding a mortgage. On the other hand, gender, race, and employment status were not significantly associated with holding a mortgage. Similarly, the moderation analysis results suggest no significant moderation effects on financial capability, financial self-efficacy, and future time perspective on the relationship between financial literacy and holding a mortgage.

The following research questions were framed to effectively address the complex relationships among factors, including financial literacy, financial behaviors, financial attitudes, and holding a mortgage:

1. What factors, including financial literacy, financial behaviors, and financial attitudes, are associated with holding a mortgage?

2. How do financial capability, financial self-efficacy, and future time perspective moderate the relationship between financial literacy and LMI households holding a mortgage?

Specifically, this study utilized secondary data from the UAS survey conducted between 2015 and 2022 to perform statistical analysis. The study's primary objective was to examine and enhance homeownership rates among LMI households in Los Angeles County and potentially extend the implications to similar populations across the U.S.. Additionally, the study sought to provide valuable insights to traditional banks, credit unions, other mortgage companies, non-profit organizations, and public policy officials, enabling them to develop practical tools and strategies to facilitate increased access to homeownership among LMI individuals.

Through careful analysis and evaluation of the data, the study generated the following significant findings:

Higher financial literacy is associated with a higher likelihood of holding a mortgage.

The regression analysis sheds light on the significant relationship between financial literacy and holding a mortgage. The data reveal that a large segment of the population exhibits low levels of financial literacy, a pattern consistent with similar studies worldwide and in the U.S. These results underscore the pressing need for improved financial literacy across diverse populations (Lusardi, 2019; Lusardi & Mitchell, 2011; Standard & Poor, 2014).

The study evaluated financial knowledge in three essential areas: basic economic concepts, financial concepts, and investment concepts. While individuals demonstrated a relatively strong understanding of interest rates and inflation, their knowledge regarding investments in stocks and bonds and risk diversification was notably deficient. The results highlight the critical role of financial literacy in mortgage-related decisions, where comprehension of interest rates and investment strategies is paramount.

Previous research has already established a link between financial literacy and higher returns on investment, especially in more complex asset classes like stocks and bonds. However, this study finds that a significant proportion of individuals lack sufficient knowledge in these domains. Consequently, interventions aimed at bolstering financial literacy have become important, particularly given the current low overall levels of financial literacy.

The regression analysis demonstrated that a mere 10% increase in financial literacy corresponds to a tangible increase in the likelihood of holding a mortgage. Specifically, for each one-unit increase in financial literacy, the odds of holding a mortgage rise by a factor of 1.106. This indicates that even modest improvements in financial literacy can exert a substantial influence on homeownership decisions. For example, a 10% increase in financial literacy, equivalent to a 1.4-point rise in the total score (out of 14), leads to a 15% increase in the odds of holding a mortgage. This emphasizes the impact of financial literacy on individuals' ability to navigate the complexities of homeownership.

Strengthening financial literacy empowers individuals to make informed and responsible financial choices, including those related to mortgages. By increasing financial literacy, individuals become better equipped to comprehend mortgage terms, assess potential risks, and strive for more favorable financial outcomes.

In summary, this study contributes valuable insights to the existing body of knowledge on financial literacy and its role in homeownership as proxied by mortgage-holding. The results highlight the critical need for targeted efforts to enhance financial literacy across diverse populations, thereby empowering individuals to navigate the intricacies of personal finance and make prudent decisions aligned with their long-term financial objectives. Ultimately, investing in financial literacy can pave the way for more financially secure and informed communities.

Household Income is statistically significant with holding a mortgage.

The significant relationship between household income and holding a mortgage highlights the pivotal role income plays in determining mortgage eligibility and status. The statistical analysis in this study corroborates the finding that higher-income individuals are more likely to hold a mortgage. This aligns with existing research that has consistently shown income as a strong predictor of homeownership eligibility (Chen et al., 2023; Serrano, 2005).

The significance of household income extends beyond its correlation with mortgage holding. Financial institutions, particularly banks, consider household income as a crucial factor when assessing loan structures for potential borrowers. The findings reveal a nuanced picture of housing challenges faced by different income groups. High-income households often have substantial financial resources, enabling them to navigate the housing market with relative ease. Also, higher income individuals are often perceived as more creditworthy and less risky borrowers, making them attractive candidates for mortgage lending. In contrast, households with lower incomes may face more stringent eligibility criteria and higher interest rates due to perceived higher lending risks.

The significance of household income in holding a mortgage or homeownership also has implications for individual financial decision-making. As households consider the prospect of

buying a home, they must assess their financial health, including income, debt-to-income ratios, and other financial obligations. Being aware of the relationship between income and homeownership eligibility empowers individuals to plan effectively and take necessary steps to meet the income requirements for homeownership.

For LMI households, understanding the relationship between household income and holding a mortgage is of utmost importance. These households face unique challenges in qualifying for mortgages due to limited financial resources. For example, in 2021, 33% households in California did not earn enough to pay for their basic needs (Manzo et al., 2021). Thus, they need access to targeted financial literacy intervention and support to improve their financial standing and enhance their chances of homeownership.

In summary, the significant relationship between household income and holding a mortgage has implications for theory and practice. It emphasizes the role of income as a key determinant of mortgage eligibility and underscores the need for informed financial decision-making by both individuals and financial institutions. By addressing the challenges faced by LMI households and providing targeted support, policymakers and stakeholders can foster greater inclusivity in homeownership and promote financial stability among diverse communities.

Age is statistically significant with holding a mortgage.

The regression analysis results in this study underscore the pivotal role that age plays in the context of homeownership and holding a mortgage. The statistical significance of age as a demographic variable suggests that age is a crucial determinant of homeownership status. Specifically, the findings indicate that older individuals are more likely to own a home than their younger counterparts. This aligns with past research (Hood, 1999), which says that as individuals grow older, their inclination towards accumulating wealth tends to increase. With a desire to

diversify their investments and secure long-term stability, older individuals may find homeownership relatively more appealing. Additionally, the lower likelihood of relocation among older individuals, as compared to younger individuals, could contribute to their increased interest in homeownership. The reduced transaction costs associated with not having to move frequently make owning a home more attractive and feasible for older individuals. These factors provide further insights into the relationship between age and homeownership and highlight its significance in financial decision-making.

It is important to recognize that while the statistical association between age and holding a mortgage is significant, the effect size is relatively small (0.9%). This finding suggests that age is only one contributing factor influencing homeownership status. Other economic, social, and cultural factors may play critical roles in shaping an individual's decision to hold a mortgage.

From a practical standpoint, understanding the pivotal role of age in homeownership has several implications for financial institutions, policymakers, and individuals seeking to enter the housing market. Financial institutions can use this knowledge to tailor their mortgage products and services to cater to the needs of different age groups. Policymakers can consider age-specific initiatives to support homeownership for various demographics. For individuals, recognizing age as a key determinant can inform their financial planning and decision-making regarding homeownership.

In summary, age emerges as a significant and influential factor in homeownership decisions. The findings of this study, combined with existing research, provide valuable insights into the complex interplay between age and homeownership. By acknowledging the impact of age, stakeholders can develop targeted interventions that promote homeownership and improve housing affordability for individuals across different age groups.

Education is statistically significant with holding a mortgage.

The results highlight the importance of education, particularly at the professional level, in predicting the likelihood of holding a mortgage among LMI households. The statistically significant relationship between education and holding a mortgage suggests that higher educational attainment (professional degree level) is associated with an increased likelihood of homeownership.

The findings reinforce the role of education as a key determinant in the decision-making process of homeownership. Individuals with higher levels of education are more likely to possess the necessary knowledge and understanding of the complex requirements of purchasing a home. This could encompass financial literacy, understanding mortgage options, evaluating creditworthiness, and navigating the overall home-buying process.

Additionally, the significance of education in predicting homeownership among LMI households has important implications for both theory and practice. From a theoretical perspective, these findings align with the human capital theory, which posits that education and skills are valuable investments that enhance an individual's economic outcomes. Homeownership, a substantial financial investment, requires informed decision-making and higher education can equip individuals with the cognitive and analytical abilities to make well-informed choices in this context.

From a practical standpoint, these results suggest that targeted educational initiatives and financial literacy programs are crucial in promoting homeownership among LMI households. Providing accessible and comprehensive financial education can empower individuals to navigate the complexities of the housing market, enabling them to make sound financial decisions related to homeownership. Furthermore, financial institutions and policymakers can

use these insights to tailor their services and support mechanisms to cater to the specific needs of LMI individuals with varying educational backgrounds. Recognizing the link between education and homeownership, financial institutions can design mortgage products and assistance programs that are accessible and tailored to different educational levels. All this said, the sample only included 10 individuals with a professional education degree level, so seeking further insight into this demographic group would be desirable.

Hispanic/Latino is statistically significant with holding a mortgage.

The results show a statistically significant relationship between Hispanic/Latino ethnicity and homeownership, with higher odds of holding a mortgage among individuals of this ethnic background.

This finding could interact with the cultural inclination among Hispanic/Latino families to allow family members live with them without paying rent to help make house payments (Richardson, 2021), or include household members in the mortgage application process to qualify for homeownership (Freddie Mac, 2020). In practice, involving multiple household members demonstrates a collective approach to homeownership, emphasizing the importance of family and community support in achieving this milestone. This cultural inclination may also foster more substantial financial responsibility and joint decision-making, contributing to the overall stability of homeownership. Furthermore, the findings underscore the challenges LMI Hispanic/Latino households face in pursuing homeownership in a high-cost state like California, particularly in Los Angeles County. The projected population growth of the Latino community in the state indicates the increasing economic significance of this demographic group (UNIDOSUS, 2023). However, historically low homeownership rates among communities of color, including Latinos, reveal a critical need for state and local interventions to address this disparity.

Targeted strategies are essential to close the homeownership gap and promote economic success for Latinos and other communities of color. These interventions include increasing access to affordable housing and providing financial literacy. By ensuring equal opportunities for homeownership, policymakers, and financial institutions can contribute to narrowing the racial and ethnic wealth gap and fostering more equitable economic growth.

The findings highlight the importance of implementing policies that cater to the unique needs and aspirations of Hispanic/Latino communities. Increasing homeownership rates among these populations can significantly impact California's overall economic well-being and contribute to a more inclusive and diverse society.

It is important to note that the findings regarding Hispanic/Latino ethnicity and homeownership have substantial implications for understanding the dynamics of mortgage holding among diverse racial and ethnic groups in Los Angeles County. By recognizing the unique cultural inclinations and financial behaviors of Hispanic/Latino households, policymakers and financial institutions can develop more targeted and practical strategies to address the homeownership disparities experienced by other race categories. Understanding the factors contributing to higher odds of holding a mortgage among Hispanic/Latino individuals can provide valuable insights for promoting homeownership and financial stability among all racial and ethnic groups, ultimately contributing to a more inclusive and equitable housing market.

Employment is statistically significant with holding a mortgage.

The findings underscore the pivotal role of employment as a significant determinant of holding a mortgage among individuals in Los Angeles County, both across the entire dataset and within the LMI Los Angeles income limits. Employment emerged as a statistically significant predictor of holding a mortgage, highlighting its importance in the decision-making process.

The analysis revealed that employed individuals are more likely to hold a mortgage than those unemployed or not in the labor force. This finding aligns with the understanding that steady employment provides a stable income source, contributing to an individual's ability to qualify for and manage mortgage payments.

These significant findings have important implications for government policy. From a policy standpoint, recognizing employment's significance can guide policymakers, financial institutions, and community organizations in formulating strategies to increase access to homeownership, particularly for individuals in LMI households. By understanding the pivotal role of employment, targeted programs and interventions can be developed to support aspiring homeowners in securing jobs and realizing their homeownership goals.

Furthermore, these findings emphasize the need for tailored financial education and assistance programs for individuals with varying employment statuses. For example, providing financial counseling and workshops targeted at unemployed or underemployed individuals may help improve their financial capability and increase their chances of qualifying for a mortgage. Overall, the significance of employment as a determinant of holding a mortgage highlights the intricate interplay of economic factors in homeownership decisions. By considering employment status in conjunction with other relevant variables, stakeholders can develop more nuanced and inclusive approaches to promote homeownership opportunities and foster financial stability within the diverse communities of Los Angeles County.

Financial Self Efficacy, Financial Capability, and Future Time Perspective do not significantly moderate the relationship between financial literacy and holding a mortgage.

Financial Self-Efficacy

The moderation analysis conducted sheds light on the relationship between the impact of financial literacy on homeownership and financial self-efficacy, financial capability, and future time perspective among LMI households. While financial literacy is positively associated with financial self-efficacy, financial capability, and future time perspective, the results indicate that financial self-efficacy was not a statistically significant moderator in the relationship between financial literacy and holding a mortgage. These findings suggest that while individuals with higher levels of financial literacy tend to possess more confidence in making financial decisions, this confidence does not significantly influence the relationship between financial literacy and homeownership. In other words, the impact of financial literacy on holding a mortgage remains significant, irrespective of the presence or absence of financial self-efficacy as a moderator.

The lack of significant moderation by financial self-efficacy implies that individuals with higher financial literacy levels are more likely to make informed choices related to holding a mortgage, regardless of their confidence in their financial abilities.

This reinforces the importance of promoting financial literacy as a crucial determinant of homeownership among LMI households. By focusing on improving financial literacy levels, policymakers and practitioners can equip individuals with the knowledge and skills needed to navigate the complexities of the housing market, thereby enhancing their ability to make sound financial decisions regarding homeownership. Integrating financial education programs that not only improve financial literacy but also foster confidence and self-efficacy in financial decision-making can be beneficial. Such programs can empower LMI households to not only acquire the

necessary financial knowledge but also believe in their ability to effectively apply this knowledge to their specific financial goals, including homeownership.

The findings highlight the crucial role of financial literacy in determining homeownership among LMI households. While financial self-efficacy may not act as a moderator in this relationship, it remains an essential aspect of overall financial well-being. By emphasizing financial literacy enhancement and fostering financial self-efficacy, stakeholders can work towards empowering individuals in their homeownership decisions, contributing to a more financially inclusive and secure future for LMI communities.

Financial Capability

The analysis explored the role of financial capability as a potential moderator in the relationship between financial literacy and holding a mortgage. The results indicate that financial capability was not a statistically significant moderator in this relationship. Although the findings do not provide evidence of financial capability strengthening the link between financial literacy and mortgage holding, there is an observable positive correlation between these two variables.

The lack of statistical significance in the moderation effect suggests that the observed relationship between financial literacy and holding a mortgage may be influenced by factors beyond the scope of the current analysis. While financial capability may not play a direct and significant role in moderating this relationship, it is essential to consider its potential implications. One interpretation of these results is that financial capability may not be a reliable predictor of holding a mortgage among LMI households. This finding highlights the need for a more comprehensive understanding of the multifaceted factors that influence homeownership decisions.

From a theoretical standpoint, the non-significant moderation effect of financial capability prompts further exploration into the complexities of financial decision-making among LMI households. Understanding the interplay between financial literacy, financial capability, and holding a mortgage is crucial for developing more accurate and robust theoretical models in the field of financial decision-making. The implications of these findings extend to practical applications in financial education and housing policy. Financial capability interventions, which aim to enhance individuals' ability to manage financial resources effectively, may need to be reconsidered or adapted to better address the specific challenges faced by LMI individuals seeking to own a home.

Financial institutions and policymakers can leverage these insights to develop targeted strategies and resources that cater to the unique needs of individuals in this income bracket. By identifying and addressing the barriers that hinder homeownership among LMI households, financial capability programs can be optimized to support more inclusive and sustainable housing initiatives. Furthermore, financial education initiatives should encompass not only enhancing financial literacy but also fostering financial capability. While financial literacy equips individuals with the necessary knowledge, financial capability empowers them with the skills and confidence to apply this knowledge effectively in real-life financial decisions, including homeownership.

To summarize, the non-significant moderation effect of financial capability in the relationship between financial literacy and mortgage holding suggests the importance of exploring additional factors that may influence homeownership decisions among LMI households. Further research and analysis are needed to gain deeper insights into the role of financial capability and its potential impact on housing outcomes. By acknowledging and

addressing the complexities involved in financial decision-making, stakeholders can develop more targeted and effective interventions that promote homeownership and financial well-being among LMI communities.

Future Time Perspective

The moderation analysis conducted in this study aimed to investigate the potential moderating role of future time perspective on the relationship between financial literacy and holding a mortgage. The results, however, did not yield statistically significant evidence of moderation in this relationship. This implies that the presence or absence of a future time perspective does not significantly influence the link between financial literacy and holding a mortgage. Nevertheless, it is important to highlight that even in the absence of this moderator, the relationship between financial literacy and holding a mortgage remains statistically significant. This reaffirms the notion that higher levels of financial literacy are indeed associated with an increased likelihood of holding a mortgage.

Implications for Advancing Theory

This study extends the theory on financial literacy and its emerging role in the overall well-being of households. It contributes to closing the gap around the lack of studies that target a particular asset class, such as mortgage or homeownership, and its association with financial literacy and other factors, including financial behaviors and attitudes of LMI households. Although there is a shortage of research on the effects of financial literacy (Fornero et al., 2011), this research contributes to our understanding of the effect of increasing financial literacy on the odds of homeownership status and the interplay among factors that influence holding a mortgage thereby advancing theory on the factors influencing of homeownership.

First, the study reinforces the importance of financial literacy as a pivotal determinant of holding a mortgage. The positive relationship between higher financial literacy levels and increased likelihood of homeownership aligns with existing research on the impact of financial literacy on financial behaviors (Lusardi, 2019; Lusardi & Mitchell, 2011; Standard & Poor, 2014). This contributes to the broader understanding of how financial literacy plays a fundamental role in shaping housing decisions and reinforces the significance of financial education in empowering individuals to make informed choices.

Second, by focusing on LMI households, this study expands the theoretical landscape of financial decision-making by considering the unique challenges and opportunities this specific population faces. Understanding the interplay between financial literacy, financial behaviors, attitudes, and holding a mortgage in the context of LMI households provides a nuanced understanding of the factors influencing homeownership decisions in vulnerable communities. This deeper understanding contributes to a more comprehensive theoretical model that accounts for the diverse economic contexts in which financial decisions are made.

Additionally, examining Hispanic/Latino ethnicity and its association with holding a mortgage contributes to theories on housing disparities among racial and ethnic groups. By recognizing the unique cultural inclinations and financial behaviors of Hispanic/Latino households, this study informs theoretical discussions on promoting homeownership and financial stability among diverse communities. The emphasis on targeted interventions for different racial and ethnic groups based on their cultural practices and financial literacy levels enriches theoretical discussions on achieving greater inclusivity in the housing market.

Overall, this research advances theory by exploring the complex dynamics of financial decision-making in the context of homeownership. The significance of financial literacy,

demographic variables, and cultural inclinations in shaping homeownership decisions highlights the opportunity to develop theoretical models that consider the multifaceted aspects of financial behavior and the related impact on homeownership.

Implications for Business Practice and Policy

The findings have significant implications for practice, particularly in financial education, mortgage lending, housing policy, and community support. By recognizing the pivotal role of financial literacy and other factors in homeownership decisions among LMI households, stakeholders can implement targeted strategies to promote greater access to homeownership and enhance financial well-being.

First, the study underscores the critical need for improved financial literacy programs. Given the positive relationship between higher financial literacy levels and the increased likelihood of holding a mortgage, policymakers and community organizations should invest in comprehensive financial education initiatives. These programs should focus on equipping individuals with the necessary knowledge and skills to navigate the complexities of the housing market, understand mortgage terms, evaluate creditworthiness, and make informed decisions related to homeownership. By enhancing financial literacy, stakeholders can empower individuals to achieve their homeownership goals and foster more financially resilient communities.

Second, financial institutions, particularly mortgage lenders, can use these insights to develop mortgage products and assistance programs that cater to the unique needs of LMI individuals. Understanding the significance of factors such as age, household income, and education in determining mortgage eligibility can guide banks in tailoring their lending practices

and eligibility criteria. By adopting more inclusive lending practices, financial institutions can play a vital role in expanding homeownership opportunities for LMI communities.

The emphasis on Hispanic/Latino ethnicity and its association with holding a mortgage highlights the importance of culturally sensitive financial services. Mortgage lenders should recognize and respect the cultural inclination among Hispanic/Latino families to include all household members in the mortgage application process to qualify for homeownership. This approach fosters a sense of family and community support in achieving homeownership milestones, which can contribute to homeownership's overall stability and success among Hispanic/Latino communities.

Housing policymakers can also leverage these findings to develop targeted interventions to address homeownership disparities among racial and ethnic groups. By implementing programs that consider various communities' unique cultural practices and financial literacy levels, policymakers can work towards closing the homeownership gap and promoting economic success for marginalized groups. Ensuring equal opportunities for homeownership can contribute to narrowing the racial and ethnic wealth gap and fostering a more equitable society.

In summary, the implications of this study for practice emphasize the significance of financial literacy, cultural awareness, and targeted support in promoting homeownership and financial stability among LMI communities. By implementing these strategies, stakeholders can work towards creating more inclusive and sustainable housing initiatives, fostering economic well-being, and empowering individuals to make informed and responsible financial choices. Advancing practice in these areas can contribute to a more financially secure and knowledgeable society. These findings have some policy implications which are described in the sections below.

Reinforcing Financial Literacy Programs in Schools

The study's findings highlight the critical role of financial literacy in homeownership decisions among LMI households. These results underscore the need for school intervention to improve financial literacy education. Currently, a significant percentage of U.S. students are not required to take personal finance courses, especially in low-income schools (Pascarella, 2018). Policymakers should prioritize implementing effective financial literacy programs in schools to equip students with essential financial knowledge and skills, including managing money and understanding homeownership. By enhancing financial literacy education, students will be better prepared to make informed financial decisions, including planning for homeownership, thereby fostering long-term financial stability.

Addressing Income Constraints and Affordable Housing

The study's significant association between income and holding a mortgage emphasizes the essential role of income in homeownership. However, it also points to income as a constraint for LMI households in qualifying for a mortgage. To address this issue, policymakers should prioritize the development of affordable housing options in high-cost areas like Los Angeles County. By building more affordable housing, LMI households will have increased opportunities to become homeowners. This promotes homeownership and financial stability and addresses the trend of LMI households relocating to more affordable suburban areas. By providing affordable housing options within the county, policymakers can encourage homeownership within local communities, contributing to the region's overall economic health and inclusivity.

Targeted Support for Hispanic/Latino Communities

The study's emphasis on the significance of Hispanic/Latino ethnicity in holding a mortgage highlights the importance of targeted support for this demographic group.

Policymakers should develop housing initiatives and financial programs considering the unique cultural practices and financial literacy levels of Hispanic/Latino communities. By tailoring policies to address this group's specific needs and challenges, policymakers can work towards closing the homeownership gap and promoting economic success for historically marginalized communities. This targeted approach can lead to more inclusive and equitable housing policies that benefit a diverse range of individuals and communities.

Inclusive Homeownership Policies

The study's focus on demographic variables, such as age and employment, indicates the importance of inclusive homeownership policies. Policymakers should consider the diverse needs of individuals in different income brackets and employment statuses when designing homeownership assistance programs. By providing targeted financial education and support to unemployed or underemployed individuals, policymakers can help them improve their financial capability and increase their chances of qualifying for a mortgage. By making homeownership opportunities more accessible and inclusive, policymakers can promote financial stability and economic well-being among a broader population segment.

In summary, the findings offer valuable insights for policymakers in shaping effective financial literacy programs, addressing income constraints, promoting affordable housing options, supporting Hispanic/Latino communities, and implementing inclusive homeownership policies. By incorporating these implications into policy initiatives, policymakers can work towards fostering greater homeownership opportunities and financial well-being for LMI households, ultimately contributing to a more equitable and economically vibrant society.

Limitations

There is no research without its limitations. Based on this premise, the following are some of the limitations of the research.

Generalizability

This study focuses on LMI households in Los Angeles County. Thus, differences in geographical location entail that caution needs to be exercised in generalizing the study results to other areas of the country, particularly those that have different characteristics.

Missing Data

There were missing data on key moderating variables, with noticeable missing data on financial capability, financial self-efficacy, and future time perspective, leading to a decrease in sample size that may have impacted the results of the analysis. Researchers and readers should exercise caution in interpreting the results, considering the limitations imposed by the missing data on the study's conclusions.

Validity/Robustness of Measurements

A scale's reliability depends on its use. The measurement of the moderating variables may have needed to be more robust set of parameters to construct the scale used that may not have been fully validated. This may have impacted the reliability of the result of the analysis.

Use of Proxies

The use of proxies can be considered a limitation. Proxies are surrogate measures or indicators used when direct measurements of the variables of interest are unavailable or challenging to obtain. While proxies can be helpful in research when direct measures are impractical, they may not fully capture the complexity and nuances of the constructs they are meant to represent. While proxies can provide valuable insights into the relationship between

financial literacy and homeownership, they may not account for other factors that could influence homeownership decisions, unrelated to factors that impact holding a mortgage. Similarly, using proxies for financial literacy, such as self-reported financial knowledge or responses to a limited set of financial knowledge questions, may not capture the full extent of an individual's financial literacy. Financial literacy is a multifaceted construct encompassing various aspects, including knowledge of financial concepts, applying financial knowledge in real-life situations, and understanding complex financial products and services.

The use of proxies for both homeownership and financial literacy can introduce measurement errors, which impact the accuracy and validity of the study's findings.

Recommendations for Future Research

Other factors could influence the relationship between financial literacy and LMI households holding a mortgage. Therefore, future research should consider the following:

- *Socioeconomic Factors:* Although this study explores the interaction effects among some variables, it does not consider access to public resources and subsidies. These variables may interact with financial literacy and impact the likelihood of LMI households holding a mortgage.

- *Housing Market Conditions:* The housing market in the U.S., especially in Los Angeles County, is characterized by high housing prices, low inventory, and low availability of affordable housing. These culminating factors can affect LMI households' decision to hold a mortgage, regardless of their financial literacy. Therefore, it will be worth exploring the housing prices and their consequential impact on homeownerships in Los Angeles County and the rest of the U.S.

- *Social and Cultural Factors:* Cultural norms, social support networks, and attitudes towards homeownership can influence the decision-making process of LMI households regarding holding a mortgage, potentially interacting with their financial literacy levels.

- *Policy and Regulation:* Government policies and regulations regarding lending practices, mortgage affordability programs, and financial education initiatives may create more opportunities and choices for LMI households in acquiring and maintaining a mortgage.

This research employed a quantitative method in examining the relationships among different factors with holding a mortgage. Thus, future research should consider a mixed (qualitative and quantitative) method to capture the nuances or phenomena around attitudes and behaviors toward homeownership and LMI holding a mortgage.

The COVID-19 pandemic has brought about many changes in housing preferences. In Los Angeles County, a major urban to suburban shift in populations is prevalent. Furthermore, many households experienced changes in lifestyle, such as larger homes or the ability to create an office space to work from home, necessitating the shift from suburban to rural areas. The study could not capture all the impacts from the pandemic.

Digital innovation in mortgages is increasing at an ever-increasing pace, with mortgage qualifications all being underwritten digitally. More research is needed into the effect of digital transformation on the likelihood of LMI holding a mortgage and being included in mainstream banking and financial services.

Conclusion

In conclusion, this research contributes valuable insights into the relationship between financial literacy and holding a mortgage among LMI households in Los Angeles County. The findings underscore the significance of financial literacy as a key determinant of homeownership and highlight the pressing need for improved financial literacy programs across diverse populations. The study demonstrates that higher financial literacy is associated with a higher likelihood of holding a mortgage, emphasizing the pivotal role of financial knowledge in making informed and responsible financial decisions.

The analysis of demographic variables reveals important factors influencing mortgage holding. Household income emerged as a statistically significant predictor, underscoring its crucial role in determining mortgage eligibility and status. Understanding the impact of income on homeownership can guide policymakers and financial institutions in developing targeted strategies to address the unique challenges LMI households face.

Age played a significant role in homeownership decisions, with older individuals showing a higher likelihood of holding a mortgage. Recognizing the influence of age in homeownership can inform financial planning for individuals across different age groups and guide policymakers in implementing age-specific initiatives to support homeownership. Education, particularly at the professional level, was a significant predictor of holding a mortgage. Higher educational attainment equips individuals with the knowledge and understanding necessary for navigating the complexities of purchasing a home.

The study revealed the significant relationship between Hispanic/Latino ethnicity and holding a mortgage. The cultural inclination among Hispanic/Latino families to involve all household members in mortgage applications exemplifies the importance of family and

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community support in achieving homeownership. Policymakers and financial institutions can utilize these insights to develop targeted interventions that promote homeownership and address the disparities experienced by diverse racial and ethnic groups in the housing market.

The moderation analysis indicated that financial self-efficacy, financial capability, and future time perspective did not significantly moderate the relationship between financial literacy and holding a mortgage. While financial self-efficacy is positively associated with financial literacy, its absence as a moderator suggests that improving financial literacy alone is essential for promoting homeownership among LMI households.

This research acknowledges several limitations, including missing data on key moderating variables and the use of proxies for homeownership and financial literacy. Addressing these limitations in future research can enhance the validity and reliability of findings. Considering these findings, several implications for theory, practice, and policy emerge. From a theoretical standpoint, this research advances the understanding of financial literacy as a crucial determinant of homeownership and its interplay with demographic variables. It contributes to closing the gap in studies targeting specific asset classes, such as mortgage or homeownership, and their association with financial literacy and other factors among LMI households.

Practically, this study emphasizes the need for targeted financial literacy interventions and educational programs to equip individuals with the knowledge and skills required for making informed financial decisions, including homeownership. By fostering financial literacy, individuals can navigate the complexities of the housing market and strive for more favorable financial outcomes.

From a policy perspective, this research highlights the importance of implementing financial literacy programs in schools, particularly for LMI students. By enhancing financial knowledge at an early age, individuals can develop the necessary financial capabilities to manage money effectively and prepare for significant life events, such as homeownership. Though not studied here, building more affordable housing, and addressing income-related constraints for LMI households can also encourage homeownership and promote more inclusive and sustainable housing initiatives.

Lastly, this study contributes to the growing knowledge of financial literacy and its role in homeownership decisions. By understanding the factors influencing holding a mortgage among diverse populations, stakeholders can develop targeted strategies to promote homeownership opportunities and foster financial stability. Investing in financial literacy can pave the way for more financially secure and informed communities, ultimately contributing to a more inclusive and equitable housing market in Los Angeles County and beyond.

REFERENCES

Abrams, A. (2017). Talk Poverty: Why Have Banks Stopped Lending To Low-Income Americans. https://ncrc.org/talk-poverty-banks-stopped-lending-low-income-american

Angrisani, M., Barrera, S., Blanco, L.R. & Contreras, S. (2021). The racial/ethnic gap in financial literacy in the population and by income. *Contemporary Economic Policy*, *39*, 524–536. https://doi.org/ 10.1111/coep.12507

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, *50*(2), 248–287. https://doi.org/ 10.1016/0749-5978(91)90022-l

Baron, R. M., & Kenny, D. A. (1986). The moderator–moderator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Barr, M. S. (2008). Financial Services, Savings and Borrowing Among Low- and Moderate-Income Households: Evidence from the Detroit Area Household Financial Services Survey 3rd Annual Conference on Empirical Legal Studies Papers. http://dx.doi.org/10.2139/ssrn.1121195

Belsky, E. S. (2013). *The dream lives on: The future of homeownership in America*. Joint Center for Housing Studies, Harvard University.

Bhutta, N., Laufer, S., & Ringo, D. (2017). The decline in lending to Lower-Income Borrowers by the biggest Banks. The Fed - The Decline in Lending to Lower-Income Borrowers by the Biggest Banks (federalreserve.gov).

Braunstein, S., & Welch, C. (2002). Financial literacy: An overview of the practice, research, and policy. *Federal Reserve Bulletin*, *88*(11), 445-457.

Browning, M., & Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature*, *34*(4), 1797-1855.

Bufe, S., Roll, S., Kondratjeva, O., Skees, S., & Grinstein-Weiss, M. (2021). Financial shocks and financial well-being: what builds resiliency in lower-income households? *Social Indicators Research*, 1-29.

Caskey, J. P. (1994). *Fringe Banking: Check-Cashing Outlets, Pawnshops, and the Poor*. Russell Sage Foundation.

Chen, J., Wang, W., & Song, Y. (2023). Economic Potential Gain, Income Uncertainty, and Rural Migrants' Urban Homeownership: Evidence from China. *Sustainability*, *15*, 7407. https://doi.org/10.3390/su15097407

Cooper, H. M. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in Society*, *1*(1), 104-126. doi:10.1007/BF03177550

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). Sage.

Despard, M. R., Friedline, T., & Martin-West, S. (2020). Why Do Households Lack Emergency Savings? The Role of Financial Capability. *Journal of family and economic issues*, 1–16. https://doi.org/10.1007/s10834-020-09679-8

Dietz, R. D., & Haurin, D. R. (2003). *The social and private micro-level consequences of homeownership*. Elsevier BV. doi:10.1016/s0094-1190(03)00080-9

DiPasquale, D., & Glaeser, E. L. (1999). Incentives and social capital: Are homeowners better citizens? *Journal of Urban Economics*, *45*(2), 354-384.

Farrell, L., Fry, T. R.L., & Risse, L. (2016). The significance of financial self-efficacy in explaining women's personal finance behaviour. *Journal of Economic Psychology*, *54*, 85–99.

Fernandes, D., Lynch Jr, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management science*, *60*(8), 1861-1883.

Fisher, L. M. & Jaffe, A. J. (2003). Determinants of international homeownership rates. *Housing Finance International*, *18*(1), 34.

FreddieMac (2020). Racial and Ethnic Valuation gaps in Home Purchase Appraisal. Racial and Ethnic Valuation Gaps in Home Purchase Appraisals. Freddie Mac.

Fornero, E., Monticone, C., & Trucchi, S. (2011). The Effect of Financial Literacy on Mortgage Choices. Netspar Discussion Paper No. 09/2011-085. http://dx.doi.org/10.2139/ssrn.1950040

Galster, G., & Santiago, A. M. (2017). Do neighborhood effects on low-income minority children depend on their age? Evidence from a public housing natural experiment. *Housing Policy Debate*, *27*(4), 584-610. doi:10.1080/10511482.2016.1254098

Gan, C., Hu, B., Gao, C., Kao, B., & Cohen, D. A. (2014). An empirical analysis of homeownership in urban China. Journal of Asian Business. *8*(1), 1-17.

Garcetti, E. (2021). Housing: Expand the Supply of Housing to Meet Market Demand. www.lamayor.org/Housing

Goodman, L. S., & Mayer, C. (2018). Homeownership and the American dream. *The Journal of Economic Perspectives*, *32*(1), 31-58. doi:10.1257/jep.32.1.31

Grinstein-Weiss, M., Greeson, J. K., Yeo, Y. H., Birdsong, S. S., Despard, M. R., & Quercia, R. G. (2009). The impact of low- and moderate-wealth homeownership on parental attitudes and behavior: Evidence from the community advantage panel. *Children and youth services review*, *31*(1), 23–31. https://doi.org/10.1016/j.childyouth.2008.05.005

Get, P. & Reher, M. (2017). Mortgage Supply and Housing Rents. Harvard University.

Henager, R., & Mauldin, T. (2015). Financial literacy: The relationship to saving behavior in low-to moderate-income households. *Family and Consumer Sciences Research Journal*, *44*(1), 73-87.

Herbert, C. E. & Belsky, E. S. (2008). The homeownership experience of low-income and minority households: A review and synthesis of the literature. *Cityscape*, *10*(2), 5-59.

Herbert, C. E., McCue, D. T., & Sanchez-Moyano, R. (2013). Is Homeownership Still an Effective Means of Building Wealth for Low-income and Minority Households? (Was it Ever?). Harvard University, Joint Center for Housing Studies.

Hirad, A., & Zorn, P. M. (2001). *A little knowledge is a good thing: Empirical evidence of the effectiveness of pre-purchase homeownership counseling*. Joint Center for Housing Studies of Harvard University.

Hogarth, J. M. & Anguelov, C .E. (2003). Can the poor save? *Financial Counseling and Planning*, *14*(1), 1.

Hood, J. K. (1999). The Determinants of Home Ownership: An Application of Human Capital Investment Theory to the Home Ownership Decision. *Honors Projects*. *71*.

Housing and Health in Los Angeles County (2015). Social Determinants of Health, Issue no. 2. Los Angeles: Los Angeles County Department of Public Health.

Housing and Urban Development (HUD), (2012). Paths to Homeownership for Low-Income and Minority Households. Paths to Homeownership for Low-Income and Minority Households | HUD USER.

Housing and Urban Development (HUD), (2021). Income Limits. Income Limits | HUD USER.

Hsieh, F.Y., Bloch, D.A., & Larsen, M.D. (1998). A simple method of sample size calculation for linear and logistic regression. *Statistics in medicine, 17*(14), 1623-1634.

Hung, A., Parker, A.M., & Yoong, J. (2009). Defining and Measuring Financial Literacy. RAND Working Paper Series WR-708. http://dx.doi.org/10.2139/ssrn.1498674

Hung, A., Yoong, J., & Brown, E. (2012). "Empowering Women Through Financial Awareness and Education", *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 14, OECD Publishing. https://doi.org/10.1787/5k9d5v6kh56g-en

Huston, S. J. (2010). Measuring financial literacy. *The Journal of Consumer Affairs*, *44*(2), 296-316. doi:10.1111/j.1745-6606.2010.01170.x

Jacobs-Lawson, J. M. & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and risk tolerance on retirement saving behaviors. *Financial Services Review*, *14*, 331-344.

Kempson, E., Perotti, V. & Scott, K. (2013). Measuring financial capability: questionnaires and implementation guidance for low-and middle-income countries. World Bank.

Khater, S., Kiefer, L., & Yanamandra, V. (2021). Housing Supply: A Growing Deficit. FreddieMac Economic & Housing Research Note.

Kleniewski, N., & Thomas, A. R. (2019). *Cities, change, and conflict: a political economy of urban life*. Routledge

Kozup, J., & Hogarth, J. M. (2008). Financial literacy, public policy, and consumers' self-protection-more questions, fewer answers. *The Journal of Consumer Affairs*, *42*(2), 127-136. doi:10.1111/j.1745-6606.2008.00101.x

Kumari, D. A. T. (2020). The Impact of Financial Literacy on Investment Decisions: With Special Reference to Undergraduates in Western Province, Sri Lanka. *Asian Journal of Contemporary Education*, *4*(2), 110-126.

Lerman, R. I., & Bell, E. (2006). Financial Literacy Strategies: Where do we go from here? Policy Brief: Networks Financial Institute. Indiana State University.

Liu, F., Jo, Y., Jimenez-Read, V., & Rodrigue, A. (2021). Data Point: 2020 Mortgage Market Activity and Trend. Consumer Financial Protection Bureau.

Loke, Y. J. (2015). Financial Knowledge and Behavior of Working Adults in Malaysia. *The Journal of Applied Economic Research*, *9*(1), 18–38.

Lown, J.M. (2011). 2011 Outstanding AFCPE Conference paper: Development and Validation of a financial self-efficacy scale.

Lunt, P. K., & Livingstone, S. M. (1991). Psychological, social, and economic determinants of saving: Comparing recurrent and total savings. *Journal of Economic Psychology*, *12*(4), 621-641. doi:10.1016/0167-4870(91)90003-C

Lusardi, A. (2019). *Financial literacy and the need for financial education*. Springer. doi:10.1186/s41937-019-0027-5

Lusardi, A., & Mitchell, O. (2007). Financial literacy and retirement planning: New evidence from the Rand American Life Panel. Michigan Retirement Research Center Research Paper No. W.P. 157.

Lusardi, A., & Mitchell, O. (2008). Planning and Financial Literacy: How Do Women Fare? *American Economic Review*, *98*(2), 413-17.

Lusardi, A., & Mitchell, O. (2011). Financial Literacy around the World: An Overview. *Journal of Pension Economics and Finance*, *10*(4), 497-508.

Lusardi, A., & Mitchell, O. (2014). The Economic Importance of Financial Literacy: Theory and Evidence. *Journal of Economic Literature*, *52*(1), 5-44.

Lusardi, A., & Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. Cambridge, Mass: National Bureau of Economic Research. doi:10.3386/w14808 Retrieved from http://www.nber.org/papers/w14808

Manzo, P. Gascon, H. Block, B.B., & Beeby, D. (2021). Struggling to Move Up: The Real Cost Measure in California. https://www.unitedwaysca.org/realcost

Mauldin, T. A., Henager, R., Bowen, C. F., & Cheang, M. (2016). Barriers and facilitators to saving behavior in low- to moderate-income households. *Financial Counseling and Planning*, *27*(2), 231-251. doi:10.1891/1052-3073.27.2.231

Mertler, C. & Reinhart, R. (2016). *Advanced and multivariate statistical methods: Practical application and interpretation, Sixth edition*. Springer.

Noor, N., Batool, I., & Muhammad, A.H (2020). Financial literacy, financial self-efficacy and financial account ownership behavior in Pakistan. *Cogent Economics & Finance*, *8*(1), 1806479.

Pascarella, D. (2018). 4 Stats That Reveal How Badly America Is Failing at Financial Literacy. Forbes.

Pendall R., Puentes, R., & Martin, J. (2006). From traditional to reform: a review of land use regulations in the nation's 50 largest metropolitan areas. Brookings Institution Research Brief.

Ranyard, R., McNair, S., Nicolini, G., Duxbury, D. (2020). An item response theory approach to constructing and evaluating brief and in-depth financial literacy scales. *Journal of Consumer Affairs*. 1–36. https://doi.org/10.1111/joca.12322

Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. *Journal of consumer affairs*, *44*(2), 276-295.

Reeves, R. V. (2020). Middle class housing stress: The affordability, crowding, and commuting trade-offs. Brookings. https://www.brookings.edu/research/middle-class-housing-stress-the-affordability-crowding-and-commuting-trade-offs/

Richardson, B. (2021). Hispanic and Latinos Homeowners More Likely to Receive Financial Help Buying a Home. Forbes *https://www.forbes.com/sites/brendarichardson/2021/07/12/hispanic-and-latino-homeowners-more-likely-to-receive-financial-help-buying-a-home/?sh=24e7b674b43a*

Rha, J., Montalto, C. P., & Hanna, S. D. (2006).The Effect of Self-Control Mechanisms on Household Saving Behavior. Association for Financial Counseling and Planning Education.

Rohe, W., Quercia, R., & Van Zandt, S. (2002). Supporting the American dream of homeownership: An assessment of the Neighborhood Reinvestment's Homeownership Pilot Program.

Sampson, J. P. (2017). A Guide to Quantitative and Qualitative Dissertation Research (Second Edition). College of Education Florida State University.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), Measures in health psychology: A user's portfolio. Causal and control beliefs (pp. 35- 37). NFER-Nelson

Servon, L. J., & Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of consumer affairs*, *42*(2), 271-305.

Sherraden, M. S., Birkenmaier, J., & Collins, J. M. (2019). Financial capability for all: Training human service professionals to work with vulnerable families. *Journal of Consumer Affairs*, *53*(3), 869-876.

Shlay, A. B. (2006). Low-income Homeownership: American Dream or Delusion? *Urban Studies*, *43*(3), 511–531. https://doi.org/10.1080/00420980500452433

Turnham, J. (2010). Attitudes to savings and financial education among low-income populations: Findings from the financial literacy focus groups. *Center for Financial Security WP*, *10*(7).

US Census Bureau (2021). American Community Survey.

Van Rooij, M. C., Lusardi, A., & Alessie, R. J. (2012). Financial literacy, retirement planning and household wealth. *The Economic Journal*, *122*(560), 449-478.

Ward, A. F., & Lynch, J. G. (2019). On a need-to-know basis: How the distribution of responsibility between couples shapes financial literacy and financial outcomes. *The Journal of Consumer Research*, *45*(5), 1013-1036. doi:10.1093/JCR/ucy037

Warner, K. (1989). On the psychology of saving: An essay on economic behavior. *Journal of Economic Psychology*, *10*(4), 515-541. doi:10.1016/0167-4870(89)90041-X

Xu, L., & Zia, B. (2012). Financial literacy around the world: an overview of the evidence with practical suggestions for the way forward. *World Bank Policy Research Working Paper*, (6107).

Zhan, M., Anderson, S. G., & Scott, J. (2006). Financial knowledge of the low-income population: Effects of a financial education program. *Journal of Sociology & Social Welfare*, *33*, 53.

APPENDIX A: IRB APPROVAL LETTER

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

November 1, 2022

Protocol #: **11122**

Project Title: THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND LOW- MODERATE INCOME (LMI) HOUSEHOLDS HOLDING A MORTGAGE IN LOS ANGELES COUNTY AND THE MEDIATING EFFECTS OF FINANCIAL BEHAVIORS AND ATTITUDES.

Dear Aliyu:

Thank you for submitting a "GPS IRB Non-Human Subjects Notification Form" for *THE RELATIONSHIP BETWEEN FINANCIAL LITERACY AND LOW- MODERATE INCOME (LMI) HOUSEHOLDS HOLDING A MORTGAGE IN LOS ANGELES COUNTY AND THE MEDIATING EFFECTS OF FINANCIAL BEHAVIORS AND ATTITUDES* project to Pepperdine University's Institutional Review Board (IRB) for review. The IRB has reviewed your submitted form and all ancillary materials. Upon review, the IRB has determined that the above-titled project meets the requirements for *non-human subject research* under the federal regulations 45 CFR 46.101 that govern the protection of human subjects.

Your research must be conducted according to the form submitted to the IRB. If changes to the approved project occur, you will be required to submit *either* a new "GPS IRB Non-Human Subjects Notification Form" or an IRB application via the eProtocol system (httpw://irb.pepperdine.edu) to the Institutional Review Board.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intentions, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at https://community.pepperdine.edu/irb/policies/.

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval.

On behalf of the IRB, we wish you success in this scholarly pursuit.

Sincerely,

Institutional Review Board (IRB)
Pepperdine University

cc: Mrs. Katy Carr, Assistant Provost for Research
        Dr. Judy Ho, Graduate School of Education and Psychology IRB Chair

24255 Pacific Coast Highway, Malibu, California 90263 ▪ 310-506-4000

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APPENDIX B: RESEARCH INSTRUMENTS

Codebook

The selected Understanding America Study (UAS) data for this study contains several variables from different surveys, including as uas 001, uas 121, uas 237, uas018, uas119, and uas 239, consisting of individual, household and sample identifiers, and language indicators. It is worth mentioning that the study relies on data from surveys administered by the Understanding America Study, which is maintained by the Center for Economic and Social Research (CESR) at the University of Southern California.

uasid: This indicates the identifier of the respondent, which is assigned to a respondent at recruitment and stays with the respondent throughout every survey they participate in. The 'uasid' was used to merge data sets from uas 018, uas119, uas 001,uas 239, and uas 237, uas 133, uas 021, uas 121, uas 096, and uas 186.

uashhid: This represents the household identifier of the respondent. Each member is assigned a household identifier, stored in the variable 'uashhid .' For the primary respondent, this identifier equals their 'uasid .' All other members of the primary respondent's household age 18 or older who become UAS respondents receive the 'uasid' of the primary respondent as their household identifier. The identifier 'uashhid' remains constant over time for all respondents.

survhhid: This represents survey household id which identifies the household a UAS panel member belongs to in a given survey. This is also their unique id. This also applies to husband and wife. For example, if the primary respondent and his/her spouse are both UAS survey participants, UAS issued both husband and spouse the same 'survhhid' identifier for that particular survey. According to uas, if the primary respondent answers the study when he/she is

living with the spouse, but the spouse answers the survey when the couple has split, they receive different 'survhhid .' Hence, the variable 'survhhid' identifies household membership of UAS panel members, at the time the respondent answers the survey.

Sample type: This indicates the sampling frame from which the household of the respondent was recruited. All UAS recruitment is done through address-based sampling (ABS), in which samples are acquired based on postal records. Currently, the variable 'sampletype' takes on three values reflecting three distinct recruitment categories (in future data sets, the number of categories may increase due to the incorporation of new recruitment categories): Note: LA County Participants were recruited through ABS drawing from zip-codes in Los Angeles County

Batch: This represents the batch for which a respondent was recruited. In this study, the batches were from 2015-2020, which are illustrated below.

UAS Survey 001

LA County 2015/05 List Sample
MSG 2016/08 LA County Batch 2
MSG 2017/03 LA County Batch 3
MSG 2019/04 LA County Batch 4
MSG 2019/05 LA County Batch 5
UAS survey 18
LA County 2015/05 List Sample
MSG 2016/08 LA County Batch 2
MSG 2017/03 LA County Batch 3
MSG 2019/04 LA County Batch 4
MSG 2019/05 LA County Batch 5
UAS survey 119
LA County 2015/05 List Sample

MSG 2016/08 LA County Batch 2

 MSG 2017/03 LA County Batch 3

MSG 2019/04 LA County Batch 4

MSG 2019/05 LA County Batch 5

UAS Survey 121

 LA County 2015/05 List Sample

MSG 2016/08 LA County Batch 2

MS MSG 2019/04 LA County Batch 4

MSG 2019/05 LA County Batch 5

UAS survey 237

LA County 2015/05 List Sample

MSG 2016/08 LA County Batch 2

MSG 2017/03 LA County Batch 3

MSG 2019/04 LA County Batch 4

MSG 2019/05 LA County Batch 5

UAS 239

LA County 2015/05 List Sample

MSG 2016/08 LA County Batch 2

MSG 2017/03 LA County Batch 3

MSG 2019/04 LA County Batch 4

MSG 2019/05 LA County Batch 5

hhmemberuasid #: This is the 'uasid' of the other household member if this person is also a

UAS panel member. It is set to missing (.) if this person is not a UAS panel member at the time

of the survey. Since this identifier is directly reported by the respondent (chosen from a

preloaded list), it may differ from the actual (correct) 'uasid' of the UAS member it refers to

because of reporting the error. Also, this variable should not be used to identify UAS members in a given household at the time of the survey. This is because the variables 'hhmemberuasid #' are taken from the most recent 'My Household' and changes in household composition involving UAS members may have occurred between the time of the respondent answered, 'My Household' and the time the respondent answers the survey. To follow UAS members of a given household, it is advised to use the identifiers 'uashhid' and 'survhhid.'

Primary respondent: This indicates if the respondent was the first person within the household (i.e., to become a member or whether she/he was added as a subsequent member. In this regard, the household comprises individuals who live together. This includes family like a spouse/child/parent) or a girlfriend or roommate.

Financial Literacy items: All correct answers are marked with (*) (OECD/INFE, 2015; FINRA-NFCS, 2022; Ranyard et al., 2020; PNAS, 2019)

FL_ l001: (categorical) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102, less than $102? 1 More than $102* 2 Exactly $102 3= Less than $102 4= I don't know.

FL_l002: (categorical) Suppose you had $100 in a savings account and the interest rate was 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total? 1 More than $200 * 2 Exactly $200 3 Less than $200 4= I don't know.

FL_l003: (categorical) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the

same as, or less than today with the money in this account? 1 More than today 2 =Exactly the same as today 3 Less than today* 4 I don't know

FL_l004: Assume a friend inherits $10,000 today and his sibling inherits $10,000 but 3 years from now. Who is richer today because of inheritance? 1 =My friend* 2 =His sibling 3 =They are equally rich 4= I don't know

FL_l005: Suppose that in the year 2020, your income has doubled, and prices of all goods have doubled too. In 2020, will you be able to buy more, the same or less than today with your income? 1 =Buy more than today 2= Buy the same as today* 3= Buy less than today 4= I don't know

FL_d001: Which of the following statements describes the main function of the stock market? 1= The stock market helps to predict stock earnings 2= The stock market results in an increase in the price of stocks 3 =The stock market brings people who want to buy stocks together with those who want to sell stocks* 4 None of the above 5= I don't know

FL_d002: Which of the following statements is correct? 1= Once one invests in a mutual fund, one cannot withdraw money in the first year 2 = Mutual funds can invest in several assets, for example invest in both stocks and bonds* 3= Mutual funds pay a guaranteed rate of return which depends on their past performance 4 =None of the above 5= I don't know

Note: UAS asked respondents randomly about either the rise (1) or fall (2) of interest rates in question p_001.

 FL_p001: If the interest rates (rise/fall), what should happen to bond prices? 1 =They should rise 2= They should fall* 3 =They should stay the same 4= I don't know

FL_p002: Do you think the following statement is true? Buying a (single company/stock mutual fund) usually provides a safer return than a (single company/stock mutual fund). 1 =True 2= False* 3= Don't know

FL_p003: Do you think that the following statement is true or false? (Stocks/Bonds) are normally riskier than (stocks/bonds). 1= True 2 =False* 3 =Don't know

FL_p004: Considering a long period (for example, 10 or 20 years), what normally gives the highest return? 1= Savings accounts 2= Bonds 3 =Stocks* 4= I don't know

FL_p005: Normally, which asset described below displays the highest fluctuations over time: savings accounts, bonds, or stocks? 1= Savings accounts 2= Bonds 3 =Stocks * 4 =I don't know

FL_p006: When an investor spreads his or her money among different assets, does the risk of losing a lot of money increase, decrease, or stay the same? 1= Increase 2= Decrease* 3 =Stay the same 4= I don't know

FL_p007: Is the following statement true? Housing prices in the US can never go down.

1 =True 2 =False* 3= I don't know

Measuring Financial Literacy

Financial Literacy score is computed as the number of correct responses to the financial knowledge questions. This is consistent with OECD calculations of financial knowledge scores. A value of 1 was assigned to a correct answer to any question and 0 in all other cases. The same applies to true or false all questions. 1 for correct response and 0 in all cases. I calculated the number of correct responses (1) and incorrect responses (0) to obtain a composite score for each financial literacy question across three surveys (uas001,uas121,uas237) in columns C_FL L001, C_FL_l002, C_FL_l003,C_FL_l004,C_FL_l005, C_FL_d001C_FL_d002, C_FL_p001, C_FL_p002, C_FL_p003,C_FL_p004,C_FL_p005, C_FL_p006, and C_FL_p007. Thus, financial literacy scores are the sum of all the correct responses (1) in those columns. The highest score was 14. Therefore, the score ranges between 0 (Low financial literacy score) - 14 (High financial literacy score).

Financial Literacy Correct Answers

1. More than $102
2. More than $200
3. Less than today
4. My Friend
5. Buy the same as today
6. The stock market brings people who want to buy stocks together with those who want to sell stocks
7. Mutual funds can invest in several assets, for example investing in both stocks and bonds.
8. They should fall.
9. False
10. False
11. Stocks
12. Stocks
13. Decrease
14. False

Source: (OECD/INFE, 2015; FINRA-NFCS, 2022; Ranyard et al.,2020; PNAS, 2019)

Measuring Financial Capability

The scoring of Financial Capability (FCScore) is the composite score (Average) of the three surveys (018, 119, and 239) i.e., the average scores of the three surveys multiplied by 10. The score ranges from 0 (low financial capability score) to 10 (high financial capability score).

FC_b9 Do you currently have a checking or savings account? 1 Yes 2 No

FC_account=1 or 0 (for no)

FC_b13: Please think about the bills that you get regularly or every month (such as utility bills and your mortgage or rent). How many of your regular bills do you pay with automatic bill payment; that is, having payments taken directly from your bank account by these companies every month without you having to schedule the payment? (Please also count bills that are automatically charged to a credit card) 1 All of them 2 Most of them 3 Some of them 4 Only a few 5 None 6 I don't know

Financial Capability scoring: Low=0 if B13=5,6 Medium=0.5 if B13=3,4 High =1 if B13=1,2

FC_b20: How do you typically pay your credit card bills? 1 I pay off my balance in full each month 2 I pay less than the full balance, but more than the minimum payment 3 I make the minimum monthly payment 4 I'm typically behind on my payments 5 I don't know

FC_LWM_CC= reverse score b20 FC=1 (High) if b20=1, FC= 0.67(Medium) if B20=2, FC=0.33(Low) if b20 =3,FC=0 if B20=4,5

FC_b24: Payday loans are small, short-term loans that must be paid in full when the borrowers receive their next paycheck or other regular deposit (such as a Social Security payment). These loans are often paid with a post-dated check. Please select the following statement that best describes your situation regarding these products. 1 I have never considered getting a payday

loan from a payday lender 2 I currently have a payday loan 3 I have had a payday loan in the past

year 4 I currently have a payday loan and I have had one in the past year 5 I considered getting a

payday loan but was rejected 6 I have considered getting a payday loan but decided not to get it.

FC_LWM_PDL=1 if B20=1 or 6; 0 if 2,3,4,5

Financial Capability Items

This includes items from 3 uas surveys uas 018, uas119, and uas 239. UAS panel survey, titled

"UAS18: Spending, Planning and Saving" focuses on day-to-day decisions about personal

spending, planning, and saving.

Note: All of the surveys (uas 018, uas 119, and uas 239) contain questions on the following

topics: Cognitive Abilities, Consumer capability, financial behavior, and Financial Literacy.

However, in this study, I focused on uas 119 to extract questions used to measure financial

capability being the latter and with more responses. .

Self-Efficacy Variables

FSE_b42: If someone has given you money to help you pay your bills, have you received more

or less help recently than you did 3 years ago?1= I didn't receive help 3 years ago and I don't

receive help today 2 =More help 3 =About the same amount of help 4= Less help

FSE_GMPB=1 if **FSE_b42=1***; FSE_GMPB=0 if* **FSE_b42=***2,3,4*

FSE_b52: Compared to 5 years ago, how confident do you feel in your ability to make

financial decisions? 1 =More confident 2= About the same 3= Less confident.

FSE_Confidence= 1 if **FSE_b52=***1 , FSE_Confidence= 0 if* **FSE_b52=***2,3*

FSE_b40a: Did you determine if you have/had enough money to retire? 1= I did not determine whether I have/had enough money to retire 2= I determined that I have/had enough money to retire 3= I determined that I do/did NOT have enough money to retire

FSE_EMTR=1 if 2; 0 if 1, 3

Future Time Perspective Items

FTP_b39: In the last 3 years, did you retire or do planning for your retirement? 1 =Yes 2 =No

*FTP_PFR=1 if **b39=1** AND respondent is NOT retired; otherwise, FTP_PFR=0*

FTP_b40b2: In deciding how much of your family's income to spend or save, people are likely to think about different financial planning periods. In planning your family's saving and spending, which of the following time periods is more important to you (and your spouse/ and your partner)? 1 =The next few weeks 2 =The next few months 3 The next year 4 The next few years 5 The next 5-10 years 6 Longer than 10 years 7 Other, please specify:

FTP_FPP= 1(High) if 5,6; FPP=0.67(Medium) if 3,4; FPP=0 (Low) if 1,2

Measuring Future Time Perspective

The scoring of Future Time Perspective (FTPScore) is the composite score (Average) of the three surveys (018, 119, and 239) i.e., the average scores of the three surveys multiplied by 10. The score ranges from 0 (low Future Time Perspective score) to 10 (high Future Time Perspective score).

Holding a Mortgage Items

intro_ 4: Please choose all answers that apply to where you live now.

1 =I have a mortgage and/or home equity loan 2= I have a (home equity line of credit/A home equity line of credit (or HELOC) is a loan where the collateral is the borrower's equity in his/her house.) on which I still owe

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money 3= I have a home equity line of credit but its balance is $0 4= I have a (reverse mortgage/A reverse mortgage is a product that allows you to convert part of the equity in your home into cash without having to sell your home or pay additional monthly bills. In a "regular" mortgage, you make monthly payments to the lender. In a "reverse" mortgage, you receive money from the lender and generally don't have to pay it back for as long as you live in your home. The loan is repaid when you die, sell your home, or when your home is no longer your primary residence./Reverse mortgage) 5= I don't have any mortgages or other loans/lines of credit on my primary residence.

024MHaveMortgage: Do you have a mortgage, land contract, second mortgage, or any other loan that uses the property as collateral? Please do not include home equity lines of credit. If you refinanced the mortgage, please treat it as a mortgage. Please choose all that apply. 1 Yes, mortgage or land contract 2 Yes, 2nd mortgage 3 Yes, other loans 4 Yes, reverse mortgage 5 No

Holding a Mortgage Scoring

Respondents that hold a mortgage were given a 1 and those that do not hold a mortgage were given 0. This is a binary number. Such assigned numbers also take into consideration those that did not take the survey. For those respondents who did not participate in at least one of the surveys were included in the formula as (" ").

Demographics

The following Demographic variables are included in each survey data set in the study. It is important to note that UAS sourced this data every quarter through the "My Household" survey. Furthermore, respondents were asked to update their information every three months(quarterly) at the time of every survey.

gender: This represents the gender of the respondent (male or female)

age: The age of the respondent at the start of the survey

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laborstatus: What is your labor force status? Please choose all that apply. 1= Currently working 2 =On sick or other leave 3= Unemployed - on layoff 4= Unemployed - looking for a job 5= Retired 6= Disabled 7= Other

education: This indicates the highest level of education attained by the respondent.

race: This variable indicates the respondent's race (e.g., '1 White' or '2 Black') or as mixed (in case the respondent identifies with two or more races). This variable is generated based on the values of the different race variables (white, black, nativeamer, asian, pacific). Furthermore, white indicates whether the respondent identifies him or herself as white (Caucasian). Black indicates whether the respondent identifies him or herself as black (African American).

white: This indicates whether the respondent identifies him or herself as white (Caucasian).

black: This indicates whether the respondent identifies him or herself as black (African American).

hisplatino: This indicates whether the respondent identifies him or herself as being Hispanic or Latino. This variable is asked separately from race.

nativeamer: This indicates whether the respondent identifies him or herself as Native American (American Indian or Alaska Native).

asian: This indicates whether the respondent identifies him or herself as Asian (Asian American).

pacific: indicates whether the respondent identifies him or herself as Native Hawaiian or Other Pacific Islander.

hhincome: This variable represents the combined income of all members of the respondent's household (living in their household) during the past 12 months. Household income (hhincome) was estimated using a linear interpolation approach. This involved taking the average of the low- and high-income values to obtain a constant number that increases linearly. By using this method, an estimate of household income (hhincome) was obtained that reflects a linear progression between the lower- and upper-income bounds.

APPENDIX C: CALIFORNIA STATE INCOME LIMITS FOR 2022

Section 6932. 2022 Income Limits

Number of Persons in Household:		1	2	3	4	5	6	7	8
Los Angeles County Area Median Income: $91,100	Acutely Low	9550	10900	12300	13650	14750	15850	16950	18000
	Extremely Low	25050	28600	32200	35750	38650	41500	44350	47200
	Very Low Income	41700	47650	53600	59550	64350	69100	73850	78650
	Low Income	66750	76250	85800	95300	102950	110550	118200	125800
	Median Income	63750	72900	82000	**91100**	98400	105700	112950	120250
	Moderate Income	76500	87450	98350	109300	118050	126800	135550	144300

Source: https://www.huduser.gov/portal/datasets/il//il22/IncomeLimitsMethodology-FY22.pd

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APPENDIX D: SUMMARY OF MAIN STUDY SCALE QUESTIONS

Financial Capability

FC_b9 : Do you currently have a checking or savings account?

 1 Yes

2 No

FC_b13: Please think about the bills that you get regularly or every month (such as utility bills and your mortgage or rent). How many of your regular bills do you pay with automatic bill payment; that is, having payments taken directly from your bank account by these companies every month without you having to schedule the payment? (Please also count bills that are automatically charged to a credit card)

1 All of them

2 Most of them

 3 Some of them

4 Only a few

5 None

 6 I don't know

FC_b20: How do you typically pay your credit card bills?

 1 I pay off my balance in full each month

 2 I pay less than the full balance, but more than the minimum payment

3 I make the minimum monthly payment

4 I'm typically behind on my payments

5 I don't know

FC_b24: Payday loans are small, short-term loans that must be paid in full when the borrowers receive their next paycheck or other regular deposit (such as a Social Security payment). These loans are often paid with a post-dated check. Please select the following statement that best describes your situation regarding these products.

1 I have never considered getting a payday loan from a payday lender

2 I currently have a payday loan

3 I have had a payday loan in the past year

4 I currently have a payday loan and I have had one in the past year

5 I considered getting a payday loan but was rejected

6 I have considered getting a payday loan but decided not to get it

Financial Self -Efficacy

FSE_b40a: Did you determine if you have/had enough money to retire?

1= I did not determine whether I have/had enough money to retire

2= I determined that I have/had enough money to retire

3= I determined that I do/did NOT have enough money to retire

FSE_b42: If someone has given you money to help you pay your bills, have you received more or less help recently than you did 3 years ago?
1 I didn't receive help 3 years ago and I don't receive help today
2 More help
3 About the same amount of help
4 Less help

FSE_b52: Compared to 5 years ago, how confident do you feel in your ability to make financial decisions?
1 More confident

2 About the same

3 Less confident

2 I determined that I have/had enough money to retire
3 I determined that I do/did NOT have enough money to retire

Future Time Perspective

FTP_b39: In the last 3 years, did you retire or do planning for your retirement?

1 Yes

2 No

FTP_b40b2: In deciding how much of your family's income to spend or save,

people are likely to think about different financial planning periods.

In planning your family's saving and spending, which of
the following time periods is more important to you?

1 The next few weeks

2 The next few months

3 The next year

4 The next few years

5 The next 5-10years

6 Longer than 10 years

7 Other, please specify

Holding a Mortgage

intro_ 4: Please choose all answers that apply to where you live now

1 =I have a mortgage and/or home equity loan

2= I have a (home equity line of credit/A home equity line of credit (or HELOC) is a loan

where the collateral is the borrower's equity in his/her house.) on which I still owe money

3= I have a home equity line of credit but its balance is $0

4= I have a (reverse mortgage/A reverse mortgage is a product that allows you to convert

part of the equity in your home into cash without having to sell your home or pay additional

monthly bills. In a "regular" mortgage, you make monthly payments to the lender. In a "reverse"

mortgage, you receive money from the lender and generally don't have to pay it back for as long

as you live in your home. The loan is repaid when you die, sell your home, or when your home

is no longer your primary residence./Reverse mortgage) 5= I don't have any mortgages or other

loans/lines of credit on my primary residence.

024MHaveMortgage: Do you have a mortgage, land contract, second mortgage, or any other

loan that uses the property as collateral? Please do not include home equity lines of credit. If you

refinanced the mortgage, please treat it as a mortgage. Please choose all that apply.

1 Yes, mortgage or land contract

2 Yes, 2nd mortgage

3 Yes, other loans

4 Yes, reverse mortgage

5 No

APPENDIX E: SUMMARY OF FINANCIAL LITERACY ITEMS

Financial Literacy Items

FL_001: Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow: more than $102, exactly $102, less than $102?

1 More than $102

 2 Exactly $102

3 Less than $102

 4 I don't know

FL_002: Suppose you had $100 in a savings account and the interest rate was 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total?

1 More than $200

2 Exactly $200

 3 Less than $200

4 I don't know

FL_003: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy more than, exactly the same as, or less than today with the money in this account?

1 More than today

 2 Exactly the same as today

 3 Less than today

 4 I don't know

FL_004: Assume a friend inherits $10,000 today and his sibling inherits $10,000 but 3 years from now. Wh because of inheritance?

1 My friend

2 His sibling

3 They are equally rich

4 I don't know

FL_005: Suppose that in the year 2020, your income has doubled, and prices of all goods have doubled too. In 2020, will you be able to buy more, the same or less than today with your income?

1 Buy more than today

2 Buy the same as today

3 Buy less than today

4 I don't know

FL_d001: Which of the following statements describes the main function of the stock market?

1 The stock market helps to predict stock earnings

2 The stock market results in an increase in the price of stocks

3 The stock market brings people who want to buy stocks together with those who want to sell stocks

4 None of the above

5 I don't know

FL_d002: Which of the following statements is correct?

1 Once one invests in a mutual fund, one cannot withdraw money in the first year

2 Mutual funds can invest in several assets, for example invest in both stocks and bonds

3 Mutual funds pay a guaranteed rate of return which depends on their past performance

4 None of the above

5 I don't know

FL_p001: If the interest rates (rise/fall), what should happen to bond prices?

1 They should rise

2 They should fall

3 They should stay the same

4 I don't know

FL_p002: Do you think the following statement is true?

Buying a (single company/stock mutual fund) usually provides a safer return than a (single

company/stock mutual fund).

1 True

2 False

3 Don't know

FL_p003: Do you think that the following statement is true or false?

(Stocks/Bonds) are normally riskier than (stocks/bonds).

1 True

2 False

3 Don't know

FL_p004: Considering a long period (for example 10 or 20 years), what normally gives the highest

return?

1 Savings accounts

2 Bonds
3 Stocks

4 I don't know

FL_p005: Normally, which asset described below displays the highest fluctuations over time: savings

accounts, bonds or stocks?

1 Savings accounts

2 Bonds

3 Stocks

4 I don't know

FL_006: When an investor spreads his or her money among different assets, does the risk of losing
a lot of money increase, decrease, or stay the same?
1 Increase
2 Decrease
3 Stay the same
4 I don't know

FL_p007: Is the following statement true? Housing prices in the US can never go down.
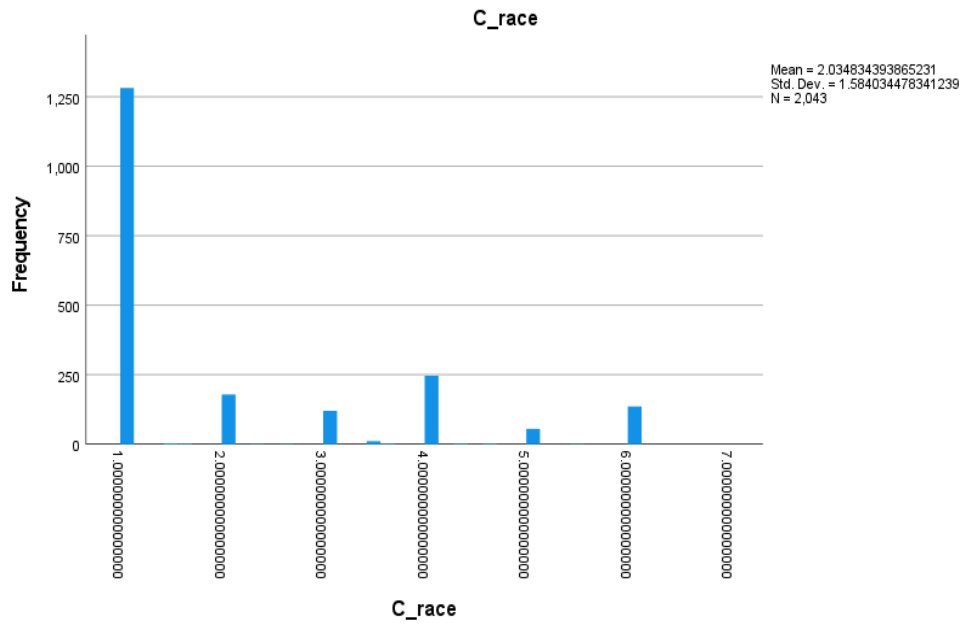1 True
2 False
3 I don't know

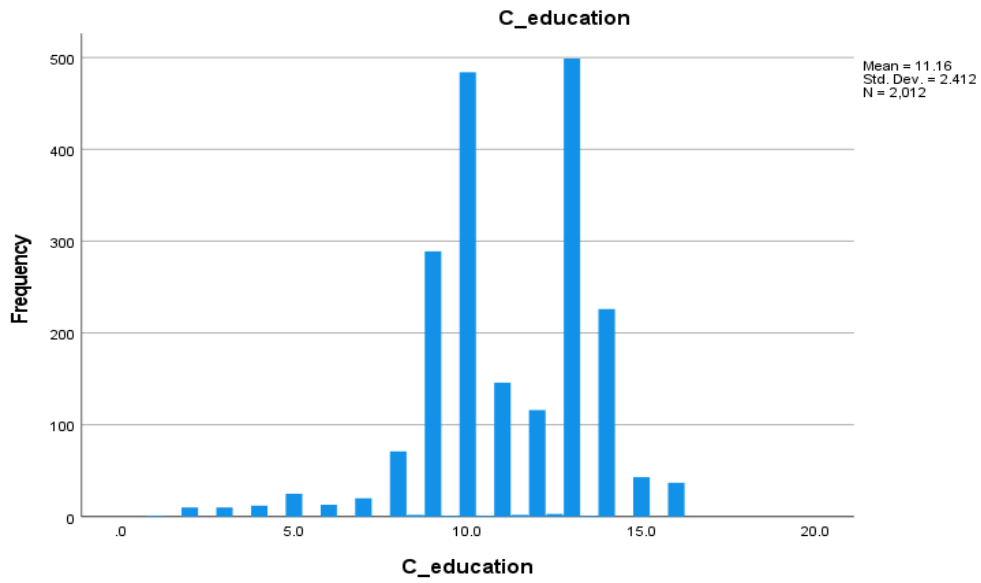# APPENDIX F: DESCRIPTIVE STATISTICS OF ALL VARIABLES IN THE STUDY

Gender

C_gender

Mean = .332062281537973
Std. Dev. = .470080249349548
N = 2,098

Frequency

C_gender

Race

C_race

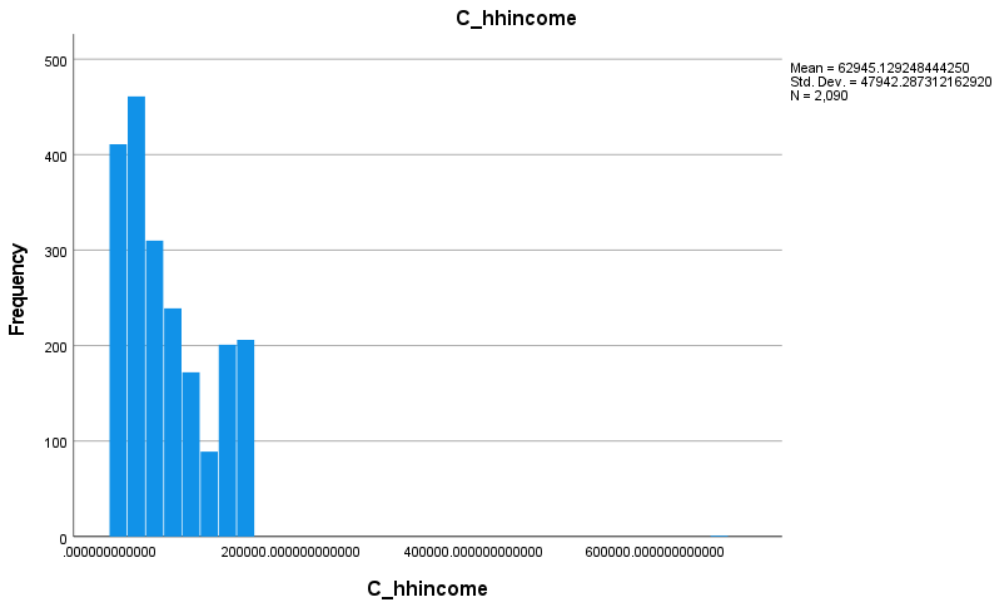Mean = 2.034834393865231
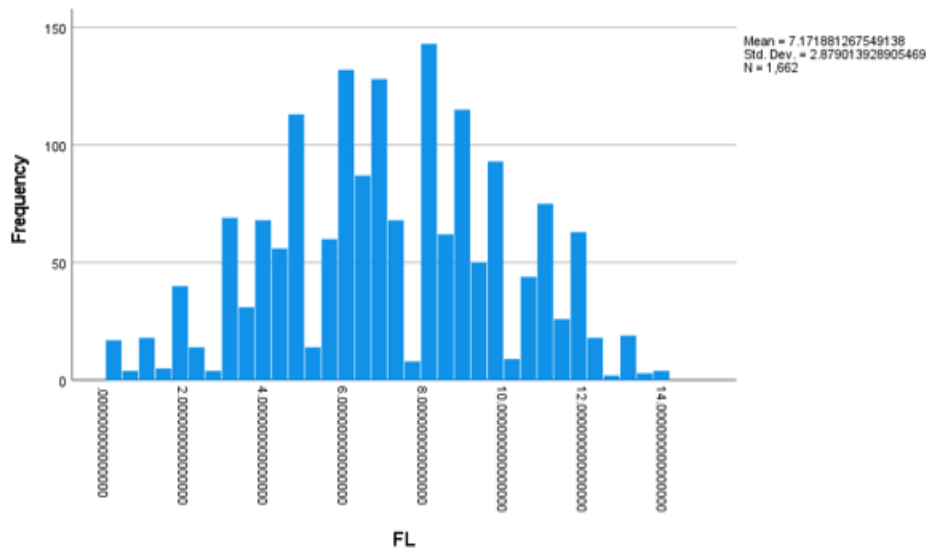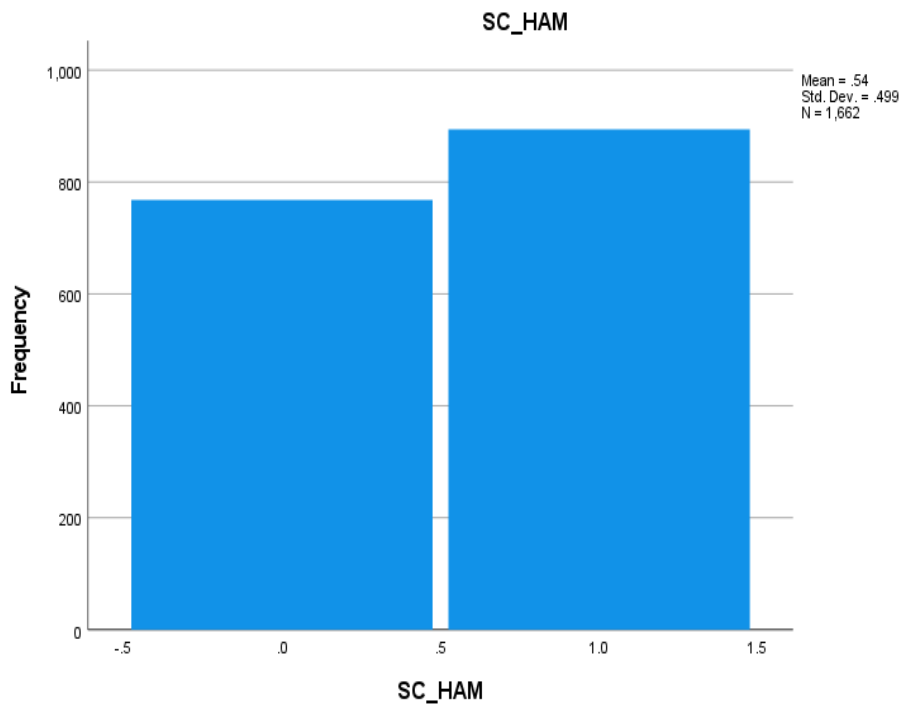Std. Dev. = 1.584034478341239
N = 2,043
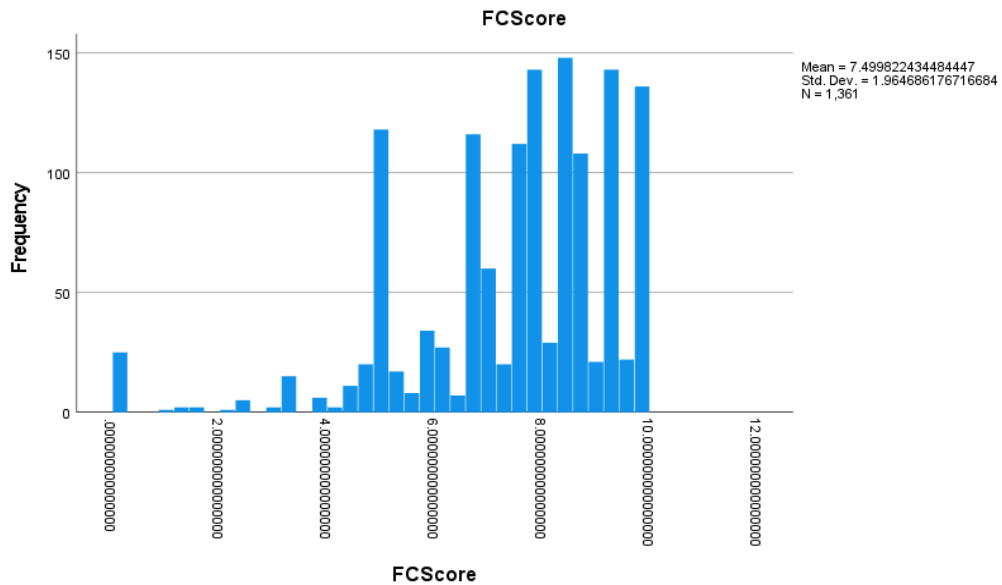
Frequency
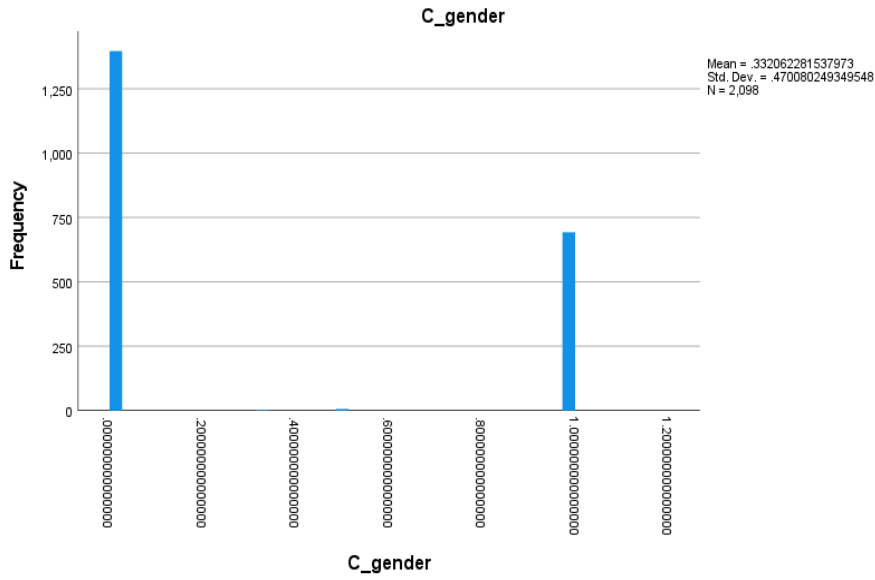
C_race

Education

Household Income

Financial Literacy

Holding a Mortgage

Financial Self- Efficacy

FSEScore

Mean = 2.975159079784632
Std. Dev. = 2.665452300336314
N = 1,362

Financial Capability

FCScore

Mean = 7.499822434484447
Std. Dev. = 1.964686176716684
N = 1,361

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Future Time Perspective

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