Walden University

College of Management and Technology

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Abstract

How the Rise in Student Loan Debt Affects Residential Real Estate

by

Heather Dufour

MA, Morehead University, 2007

BS, Union College, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Applied Management and Decision Sciences

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Abstract

Student loan debt has increased significantly over the past several years. At the same time, there has been a historic drop in first-time home buyers. What remains uncertain is if these two trends are related. The purpose of this quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. The theoretical foundation focused on consumer behavior through Maslow's motivation-need theory. Individual-level longitudinal data from the National Longitudinal Survey of Youth 1997 was used to examine more than 3,000 participants' responses regarding their student loan debt and home ownership status, mortgage status, and amount of mortgage debt. For each outcome, ordinary least squares models were estimated, and outcomes were regressed on respondent-reported total educational debt and a set of control variables associated with both educational debt and homeownership. Results indicated that homeownership and mortgage status, though significant, had a relatively small inverse association with educational debt. This small association does not support the empirical claim of educational debt being a major factor in the decline of first-time home buyers. However, the analysis between educational debt and mortgage amount revealed a significant and somewhat larger inverse relationship, indicating that even though student debt may not be a major factor in deterring homeownership, it may lead young adults to purchase less expensive homes and thus less mortgage debt. Multiple business sectors, the government, and individual consumers can benefit from this study through a better understanding of the financial needs of those students with student loan debt.

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Chapter 1: Introduction to the Study

Student loan debt affects 44.7 million people in the United States and totals $1.68 trillion (Bustamante, 2020). The impacts range from struggling to pay bills to reaching major lifetime milestones and achievements, including the purchase of a home (Mezza et al., 2016). In this study, I attempted to uncover what effects student debt has on real estate, more specifically what effects student loan debt has on the ability of buyers to purchase a home for the first-time.

Student loan debt has increased significantly over the past several years (Institute for College Access and Success, 2020). At the same time, there has been a historic drop in first-time home buyers (The National Association of Realtors, 2020). What remains uncertain is if these two trends are related. Uncovering this information could help inform policy during a time of economic instability.

Throughout this chapter, I review the background of the study, including literature related to the scope of study and gaps in knowledge. Then I evaluate the problem statement and purpose of the study, followed by the research questions, theoretical foundation, and nature of the study. Definitions, assumptions, scope and delimitations, and limitations are then addressed. Lastly, I explore the significance to theory, practice, and social change before transitioning to Chapter 2.

Background of the Study

Researchers have confirmed that there has been a significant increase in the amount of student loan debt, well beyond the rate of inflation. The Institute for College Access and Success (2020) concluded that about six out of every 10 students graduating

from public or private colleges in 2019 had student loan debt. On average, students who had debt owed nearly $29,000 (Institute for College Access and Success, 2020). This is a significant increase compared to students who graduated a decade prior. According to the Institute for College Access and Success, in 2004, students who graduated with debt owed approximately $18,500. This is an increase of 57%, almost double the rate of inflation (36%) for the same time period (Institute for College Access and Success, 2020).

Student loan debt is now the second largest type of consumer debt, falling second only to home mortgages (Bustamante, 2020). Student debt has ballooned from $241 billion to more than $1 trillion in the past decade (Bustamante, 2020). Palacios (2014) estimated that 5.9 million households under the age of 40 pay over $250 in student loans per month. This is an increase of more than 3 million households since 2005.

During the same time that student loan debt grew exponentially, first-time home buyers decreased. The National Association of Realtors (2020) reported that first-time home buyers make up 33% of all home buyers, down 6% from 2013. Historically, the average of first-time home buyers is roughly 40% of the portfolio (National Association of Realtors, 2020).

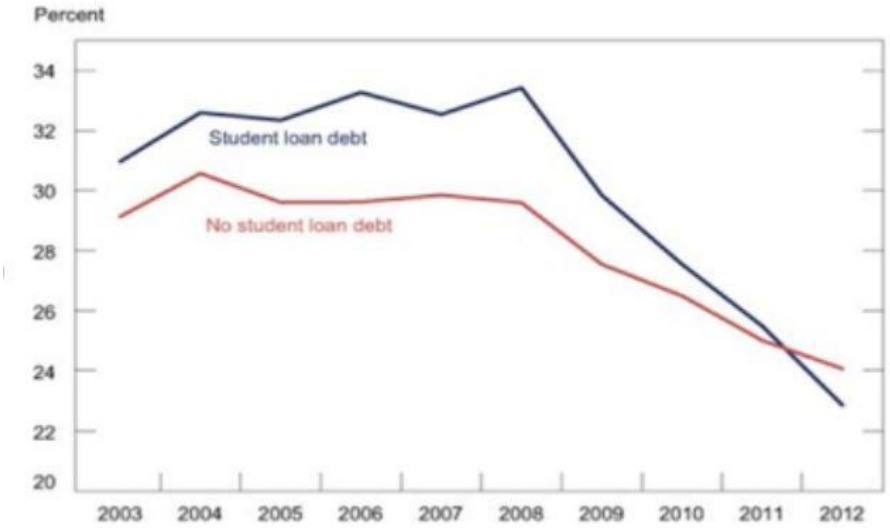
The National Association of Realtors (2020) indicated that the absence of first-time home buyers is the main contribution to the housing industry's lack of recovery. Debt is listed as the main reason first-time home buyers are not purchasing homes. Of those who listed debt as the reason for not purchasing, 51% identified student loan debt as the type of debt preventing them from purchasing a home (National Association of

Realtors, 2020). High levels of debt have prevented many first-time home buyers from being able to save the necessary down payment to secure a loan.

In the past, homeownership of those with student loan debt has been higher than those with no student loan debt (Brown et al., 2015). This is consistent with the fact that student debt holders typically have higher levels of education and therefore are able to secure higher paying jobs. However, Brown et al. (2015) reported that this trend shifted in 2012. Their study of home ownership at age 30 revealed that for the first time in history, those buyers with no history of student loan debt surpassed the number of buyers who purchased homes with student loan debt (Brown et al., 2015).

Figure 1

Proportion of Borrowers With Home-Secured Debt at Age 30



Note. Both buyers with student loan debt and without student loan debt began to decline around 2008 when the recession began. Borrowers with student loan debt declined at almost double the rate those without student loan debt declined. Adapted from "Measuring Student Debt and Its Performance." by M. Brown, A. Haughwout, D. Lee, J.

Scally, and W. van der Klaauw, 2015, Upjohn Institute for Employment Research, pp. 37-52 (https://doi.org/10.17848/9780880994873.ch3). CC BY-NC.

Due to the correlation of student loan debt increasing and first-time home buyers decreasing, many have speculated that student loan debt is the cause for the decrease in first-time home buyers. For example, Hunt (2015) stated, “There’s little doubt that the growth of student loan debt has had an effect on the real estate market” (para. 11). However, correlation does not necessarily mean causation. Very few researchers have tested this speculation, and of those who have, their results have varied and have provided contradicting conclusions.

Brown and Caldwell (2013) used credit scores to examine the link between home mortgage debt and student loan debt between two different samples. One sample contained young adults who had attended college, and the other sample contained young adults who had not attended college. They found that in recent years, young adults with student loan debt have lower credit scores than those without any debt, and, therefore, were unable to secure homeownership, explaining the decline in first-time home buyers with student loan debt (Brown & Caldwell, 2013).

Cooper and Wang (2014) examined the impact of student loan liabilities on individuals’ homeownership status and wealth accumulation. They focused on datasets from the Panel Study of Income Dynamics and the 1988 National Educational Longitudinal survey. From this, they were able to gather information on student debt liabilities, school history, overall debt, and homeownership status. Overall, they

concluded that student debt lowers the likelihood of homeownership (Cooper & Wang, 2014).

Houle and Berger (2015) also examined the relationship between student loan debt and homeownership using data from the National Longitudinal Study of Youth 1997 (NLSY97). Though they found statistical significance in the relationship, they ultimately concluded that it had no economic impact and that student loan debt does not substantially influence the housing market (Houle & Berger, 2015). Brown et al. (2015) supported the conclusions of Houle and Berger (2015). Brown et al. conducted a study on the correlations between student loan debt and first-time homebuyers, finding very little evidence that student loan debt affected homeownership.

Recent data have indicated that student loan debt has grown at an exponential rate (Institute for College Access and Success, 2020). The data have also revealed that the percentage of first-time home buyers has declined, and the historic trend of student debtors making up a greater percentage of first-time home buyers is no longer true (National Association of Realtors, 2020). However, there is very little research testing to see if there is a direct relationship between increasing student loan debt and declining first-time home buyers. The research that does exist has conflicting outcomes. Cooper and Wang (2014) concluded that student loan debt lowers the likelihood of young adults purchasing a house or at least delays homeowners, whereas Houle and Berger (2015) and Brown et al. (2015) determined that student loan debt did not impact homeownership. In this study, I examined these differing conclusions in an effort to determine if student debt does significantly impact homeownership for young adults.

Problem Statement

Student loan debt has increased significantly over the past several years (Institute for College Access and Success, 2020). There is approximately 44.7 million student borrowers in the United States, with an average debt of $37,584 each (Bustamante, 2020). The student loan debt growth rate outpaces the rise in tuition costs by 353.8% (Bustamante, 2020). Over this same period of time, there has been a historic drop in first-time home buyers (The National Association of Realtors, 2020). Many experts have speculated that because the demographics of student loan debt holders are so similar to first-time home buyers, the decrease in residential real estate is directly related to high student loan debt (Cooper & Wang, 2014; Houle & Berger, 2015; Hunt, 2015). The Institute for College Access and Success (2020) stated that student loan debt has more than doubled (56%) from 2004 to 2019, which is almost twice the rate of inflation. The average debt at graduation in 2019 was $28,950 (Institute for College Access and Success, 2020). Even though student debt holders usually have higher levels of education and hence higher incomes, they are no longer purchasing homes as young adults (National Association of Realtors, 2020). Thirty-year-olds with no history of student loans are more likely to have mortgage debt than those with student loan debt (Brown & Caldwell, 2013). The general management problem is that the decreasing rate of first-time homeowners is creating significant issues within the housing industry and the financial viability of home builders. The specific management problem is that there is little information available to know if there is a relationship between student loan debt and home ownership.

Purpose of the Study

The purpose of this quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. The independent variable, student loan debt, was generally defined as the amount of educational debt, including money borrowed from government, private institutions, friends, and/or family held by individuals at the age of 30. The dependent variable, home ownership, was generally defined as whether the individual and/or their spouse owned a home at the age of 30.

Research Questions and Hypotheses

Research Question (RQ) 1: What is the relationship between home ownership and student loan debt for young adults?

$H_0$1: There is no relationship between student loan debt and home ownership.

$H_1$1: There is a relationship between student loan debt and home ownership.

RQ2: What is the relationship between mortgage amount and student loan debt for young adults?

$H_0$2: There is no relationship between student loan debt and mortgage amount.

$H_1$2: There is a relationship between student loan debt and mortgage amount.

The impact student loan debt has on home ownership for young adults who have attended postsecondary institutions was examined in this study. Educational debt held by individuals at the age of 30 included money borrowed from government, private institutions, and friends and family. Home ownership was determined by whether the individual and/or their spouse owned a home at the age of 30. Individual-level

longitudinal data were acquired from the NLSY97 cohort. According to the United States Bureau of Labor Statistics (2016), the NLSY97 cohort is a project that follows the lives of a sample of American youth born between 1980 and 1984; 8,984 respondents were ages 12 to 17 when first interviewed in 1997. The ongoing cohort has been surveyed 18 times to date and is now interviewed biennially.

Theoretical Foundation

Consumer theory informs how people make decisions to spend their money based on given preferences and budget constraints and how individual tastes and incomes influence the demand curve (Levin & Milgrom, 2004). Multiple consumer behavior theories exist, including the theory of reasoned action, the Engel, Kollat, Blackwell model, Stern's impulse buying, and motivation-need theory. The theoretical foundation for this study focused on understanding consumer's behavior through the lens of the motivation-need theory.

Motivation-need theory is based on Maslow's hierarchy of needs (Raaij & Wandwossen, 1978). This theory includes five levels of needs: physiological, safety, love, esteem, and self-actualization (Maslow, 1954). One must fulfill their needs on the lowest level (physiological) before moving up to the next level. Consumer behavior is motivated by the deprivation and gratification of these needs (Raaij & Wandwossen, 1978).

Many business schools and marketing classes have adapted Maslow's theories to explain consumer behavior (Ohio University, 2016). This adaptation has concluded that consumers are motivated to prioritize purchases based on their hierarchal needs.

The decline in first-time home buyers can be attributed to Maslow's theory of motivation and hierarchy of needs. The consumers who once made up the portfolio of first-time home buyers are now motivated by different needs. The motivation to achieve the needs of esteem, such as social status and reputation, has been replaced by a need for safety and financial security.

Maslow's hierarchy of needs and their impact on consumer behavior is explained in more depth in Chapter 2. Chapter 2 addresses the financial insecurity brought upon by high student loan debt and how this has changed the dynamics of first-time home buyers.

Nature of the Study

The nature of the study was quantitative. Linear regression was used to determine if there was a relationship between student loan debt and home ownership. Linear regression is consistent with determining if there is a relationship between two quantitative variables (Basu & Kwun, 2014; Cramer & Howitt, 2004; Isaac & Michael, 1995). Researchers have clearly shown that student loan debt has increased over the last several years, while first-time home purchases have decreased. Data were gathered from the annual NLSY97 survey (United States of Labor Statistics, 2016). Participants of the survey were asked at the age of 30 about types and amounts of debt they hold, assets, and homeownership. Student loan debt was the independent variable, generally defined as the amount of educational debt held by individuals at the age of 30, including money borrowed from government, private institutions, friends, and/or family. Home ownership was the dependent variable, generally defined as whether the individual and/or their spouse owned a home at the age of 30.

Definitions

Consumer behavior: The study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society (Perner, 2018).

Employment status: An individual is considered to be employed if they had a job or were actively serving in the military during Week 26 of the year surveyed (United States Bureau of Labor Statistics, 2016).

Family structure: Relationship of the youth to the primary adults in the household at age 12 (e.g., both biological parents, biological mother, adoptive parent[s]; United States Bureau of Labor Statistics, 2016).

First-time home buyer: An individual is considered a first-time home buyer who (a) is purchasing the security property, (b) will reside in the security property as a principal residence, and (c) had no ownership interest (sole or joint) in a residential property during the 3-year period preceding the date of the purchase of the security property (Fannie Mae, 2020).

Geographic region: Provides the Census region where the respondent resides (Northeast, North Central, South, or West; United States Bureau of Labor Statistics, 2016).

Home ownership: Individual and/or their spouse owned a home at the age of 30 (United States Bureau of Labor Statistics, 2016).

Household income: Calculated total family income in the previous calendar year. Several questions were combined to create this income variable: nonfarm and farm wages, the wages of the respondent's spouse/partner, child support, interest and dividends from stocks or mutual funds, rental income, retirement pension/alimony/Social Security payments, parents' income if the respondent resided with them, monetary gifts (other than allowance) from parents, public support sources, and other income (United States Bureau of Labor Statistics, 2016).

Socioeconomic status: The highest level of education achieved by any one parent (United States Bureau of Labor Statistics, 2016).

Student loan debt: The amount of educational debt held by individuals at the age of 30, including money borrowed from government, private institutions, friends, and/or family (United States Bureau of Labor Statistics, 2016).

Young adult: Individual ranging in age from 18 to 35 (Petry, 2002).

Assumptions

The first assumption was that all participants answered the survey questions truthfully. The majority of the data for this study was derived from participants' responses to survey questions, so it was necessary to assume these responses were accurate to have informed results. This was a reasonable assumption because survey results were anonymous, and identities remained confidential. In addition, participants were able to withdraw from the study at any time with no ramifications.

The second assumption was that the sample was representative of the entire population, young adults who have attended college in the United States. The conclusions

of this study are assumed generalizable to the entire population. This was reasonable because the sample was carefully selected to be representative of the entire population. A list of housing units for the cross-sectional sample and the oversample was derived from two independently selected, stratified multistage area probability samples. This ensured an accurate representation of different sections of the population defined by race, income, region, and other factors.

Due to the quantitative nature of this study, it was assumed that reality is objective and independent of me as the researcher. I remained distant and independent from the study so that the research was not influenced in any way by my values. I also assumed that the study can be replicated and that generalizability was possible.

Scope and Delimitations

I examined the trend of student loan increases and the possible effects it had on home ownership. Individual level data from the NLSY97 cohort were used to test if student loan debt deters young adults from purchasing homes. I focused on responses at age 30 because this was the oldest age all participants in the study had reached where homeownership was questioned. In addition, I focused on participants who had attended at least some level of postsecondary schooling, thus being eligible to receive student loan debt.

Three key outcomes were examined. The first was whether the individual and/or their spouse owned a home at the age of 30. The second was whether the individual and/or their spouse held a mortgage. Finally, I examined the amount of the mortgage debt owned by the individual and/or spouse. By exploring both home ownership and mortgage

debt, I can determine if student loans are deterring home ownership or leading young adults to purchase less expensive homes and thus less mortgage debt.

A range of cofounders were accounted for that are associated with both homeownership and educational debt. These included race, geography, family structure, socioeconomic status, education, marital status, employment, and income. This ensured that effects on home ownership are due to educational debt and not another common factor.

Limitations

One key limitation of this study was measuring homeownership and student loan debt at only one point in time, age 30. This essentially ignores homeownership prior to the age of 30. It is possible that young adults purchased and exited homeownership prior to the age of 30.

A second limitation was that the downward trend in home buying predated the rise in student loan debt. This could mean that other reasons exist for the downward trend in home buying. Furstenburg (2015) and Houle (2014) suggested that the downward trend in home buying could be due to the structural shifts in the transition to adulthood.

Two additional limitations included self-reported data and possible cofounders not accounted for. Participants self-reported student loan debt from the government, private institutions, friends, and/or family. The only data in the NLSY97 regarding student debt were all self-reported. There is also the possibility that not all cofounders were accounted for. Even though a whole host of factors were considered, there is the possibility that there are others that relate to home ownership and educational debt.

Significance of the Study

This research helps fill a gap in understanding the recent decline in first-time home buyers. Many have speculated that higher student loan debt is a major culprit in the decline of first-time home buyers due to the correlation between the historical trends of student loan debt and home purchases (Brown & Caldwell, 2013; Federal Reserve Bank of New York, 2013); however very little research has addressed the association between these variables. Among the few researchers who researched these variables, conclusions have been mixed (Brown & Caldwell, 2013; Chitegi, 2008; Houle & Berger, 2015). This project was unique because it addressed an underresearched area of finance that is of growing concern to the United States. The results of this study provide needed clarification on the reduced number of first-time home buyers during a time of economic instability. Insights from this study can aid the government, persons in the financial market, and persons in the residential market understand the reasons behind this residential phenomenon. In addition, the results can be used to develop financial planning tools to aid the country as we push past the current recession.

Significance to Theory

Only a small amount of research has been directed towards the decrease in first-time home buyers and the potential impact of increasing student loan debt. The research that has been conducted has mixed results. In this study, I attempted to help clarify the relationship between rising student loan debt and first-time home buyers for young adults.

The latest study using the NLSY97 cohort was completed using 2011 data (the most recent at the time). New data from 2017-2018 have now been released. All of the participants have now reached the age of 30, completing the age 30 debt module. This newest level of data allowed a deeper insight into the conclusions drawn by previous researchers.

Significance to Practice

This study may potentially aid business professionals in the housing industry, including but not limited to real estate agents and contractors. It can also inform the banking industry, particularly mortgages on prime residences. Policy can also be affected at the local and national levels.

Housing industry professionals can benefit from this study by learning more about their prospective clients and population. This study can help determine the driving motivation behind first-time home buyers. Real-estate professionals can determine where to focus the majority of their energy on: young adults with student debt; young adults with no debt; or possibly both.

The banking industry can also gain awareness from this study. Banks can have more information about their customers who purchase homes. Moreover, they can have a better understanding of how student loan debt affects their customers. The study can also help them target a particular set of the population for mortgages.

In addition, policy may be affected. The government will have more information at their disposal to determine if student loan debt is hampering the economy. The government can also focus their policies on helping students who are struggling with

student loan debt or examine the causes of student loan debt increases to provide better opportunities to first-time home buyers.

Significance to Social Change

Positive social change can occur as a result of this study. Multiple business sectors, the government, and individual consumers can benefit from this study. A better understanding of the housing market and prospective buyers can aid in the revitalization of the housing industry. Businesses can better cater to the needs of first-time home buyers if they have a better understanding of the challenges their customers face. Businesses can also adjust their marketing plans to attract the most appropriate sector of the population.

The results of this study can be used to develop financial planning tools to aid students with high levels of student loan debt. Planning tools could directly focus on how students can combat student loan debt to be in the best possible position to purchase their own home. In addition, colleges and other agencies could aid students with high student loan debt in securing other possible housing when purchasing is not an option.

Positive social change may also be brought about through policy change. The results of the study may inform policy makers of particular issues brought upon by student loan debt. As a result, policies or programs could be put in place to aid those students with high student loan debt or to reduce the number of college students who leave college in debt.

Summary and Transition

Recent data have revealed that student loan debt has grown at an exponential rate. The data have also shown that the percentage of first-time home buyers has declined and

the historic trend of student debtors making up a greater percentage of first-time home buyers is no longer true. However, there is very little research testing to see if there is a direct relationship between increasing student loan debt and declining first-time home buyers. The research that does exist has conflicting outcomes. In this study, I examined these differing conclusions in an effort to determine if student debt significantly impacts homeownership for young adults.

The purpose of the quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. Using data from the NLSY97 survey, linear regression was used to determine if there was a relationship between student loan debt and home ownership.

The next chapter addresses the theoretical framework and an in-depth literature review. A comprehensive look at Maslow's hierarchy of needs and its impact on consumer behavior theory is also explored.

Chapter 2: Literature Review

The rate of first-time home buyers has decreased, creating significant issues within the housing industry and the financial viability of home builders. The National Association of Realtors (2020) stated, “In 2019, the share of first-time home buyers was 33 percent, holding steady from 33 percent last year. This figure has gravitated away from the historical norm at 40 percent of the market” (p. 5). Trends have indicated that while first-time home owners are decreasing, student loan debt has continued to rise. The purpose of this study was to determine the relationship between student loan debt and home ownership for young adults in the United States.

Limited information is available about the relationship between student loan debt and home ownership. Many have speculated that the downward trend of first-time home buyers and the upward trend of student loan debt are related, but little research exists to support this claim. Among the few studies that did address these variables, conclusions are mixed (Chitegi, 2008; Brown et al., 2015; Houle & Berger, 2015).

This chapter includes three major sections: the literature search strategy, the theoretical foundation, and the literature review. The literature search strategy and literature review provide an in-depth analysis of studies pertaining to student loan debt and first-time home ownership. The theoretical foundation focuses on consumer theory, specifically motivation-need theory.

Literature Search Strategy

In collecting literature for this review, several databases and search engines were used to gather as much pertinent information as possible. In addition, a wide array of key

search terms and combinations were used. The literature review had an extensive scope with various types of literature and sources. The literature review focused on consumer behaviors, student loan debt, and first-time home buyers. The current trends of student loan debt and its association with the housing market were examined.

The following databases were used, in addition to others: Educational Resources Information Center (ERIC), Bureau of Labor Statistics, Federal Reserve Bank, Institute for College Access and Success, National Association for Realtors, Dissertation and Theses Databases, Fannie Mae, and Academic Search Premier. Various search engines were also used. These include Google Scholar, Microsoft Academic, ResearchGate, and iSeek.

Several key search words and combinations of words were used in the research process. Search terms included *student loan debt, first-time home buyers, effect of debt on homeownership, increase in student loan debt, housing crisis, educational debt, mortgage debt, postsecondary education and debt, young adults and homeownership, student loan debt and the real estate market, consumer theory, consumer behavior theory, motivation-need theory, Maslow's hierarchy of needs, consumer motivation,* and *prioritization of purchases.*

The scope of the literature review was extensive. The majority of the review consisted of journal articles written in the past 5 to 7 years. However, older articles were included as relevant. In addition to journal articles, government databases, government surveys, dissertations, books, and blog posts were used.

Theoretical Foundation

Consumer behavior, the theoretical framework for this study, is the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society. In this study, I focused on the needs individuals choose to fulfill and the reasons behind their choices. Multiple consumer behavior theories exist, including the theory of reasoned action, the Engel, Kollat, Blackwell model, Stern's impulse buying, and motivation-need theory.

The theory of reasoned action is based on the fact that consumers are rational and act with their best interests in mind. Each action has many consequences. There is also a likelihood associated with each consequence (Weddle & Bettman, 1974). Consumers use an expectancy valued approach to evaluate their actions and determine how to best acquire their desired outcome (Weddle & Bettman, 1974).

The Engel, Kollat, and Blackwell consumer decision-making model expands on the theory of reasoned action. Building upon the assumption that humans are rational, the Engel, Kollat, and Blackwell model lays out a 5-step process consumer's use when making a purchase. The five steps consist of (a) problem recognition, (b) information search, (c) evaluation of alternatives, (d) purchase, and (e) postpurchase evaluation (Ashman et al., 2015).

Stern's impulse buying theory coincides with rational purchasing decisions. In addition to rational purchases, Stern believed in sudden impulse purchases. These purchases are unplanned, decided quickly, and usually result in immediate acquisition

(Muruganantham & Bhakati, 2013). Stern established four categories of impulse buying: impulse purchases, reminded impulse buys, planned impulse decisions, and suggested impulse purchases (Muruganantham & Bhakati, 2013).

The motivation-need theory is based on Maslow's hierarchy of needs. This theory includes five levels of needs: physiological, safety, love, esteem, and self-actualization (Raaij & Wandwossen, 1978). One must fulfill their needs on the lowest level (physiological) before moving up to the next level. Consumer behavior is motivated by the deprivation and gratification of needs (Raaij & Wandwossen, 1978).

Many business schools and marketing classes have adapted Maslow's theories to explain consumer behavior (Ohio University, 2016). Consumers are motivated to prioritize purchases based on their hierarchal needs; therefore, marketers develop their advertisements to focus on these needs. For this study, I chose the theory focused on consumer behavior through the lens of Maslow's hierarchy of needs.

Maslow's Hierarchy of Needs

Maslow's hierarchy of needs consists of five levels. At the very bottom is what he considered the most basic needs, physiological needs. Physiological needs include food, water, oxygen, sleep, and shelter. These needs are crucial for survival. According to Maslow (1954), "In the human being who is missing everything in life in an extreme fashion, it is most likely that the major motivation would be the physiological needs rather than any others" (p. 82). For example, one cannot live without food and water. A person who is faced with extreme hunger or thirst would not be motivated by factors such as prestige or recognition.

Though physiological needs are the most basic and must be satisfied before all others, they are typically not the dominating force behind people's actions. Most people are not suffering from extreme hunger or lack of shelter or one of the other basic needs. Society has developed to help people meet these needs. According to Maslow (1954), "Culture itself is an adaptive tool, one of whose main functions is to make the physiological emergencies come less and less often" (p. 83). Once one has satisfied their physiological needs, other needs will begin to emerge. This is not to say that one will never be hungry again, but that hunger does not control our whole existence.

In Maslow's hierarchy of needs, physiological needs are followed by safety needs. After physiological needs have been gratified, a new set of needs emerge, safety needs. Safety needs consist of personal security, financial security, health, general well-being, safety from illness/accidents, and safety of family. There is a wide range of motivational factors that could fall into the category of safety. The tendencies of a child easily demonstrate the need for safety. Children prefer order and predictability:

> Young children seem to thrive better under a system that has at least a skeletal outline of rigidity, in which there is a schedule of a kind, some sort of routine, something that can be counted upon, not only of the present but for the future. (Maslow, 1954, p. 86)

These same tendencies can be seen in adulthood. Adults prefer the familiar to the unfamiliar and the known versus the unknown. When one is faced with uncertainty, feelings of doubt, anxiety, and fear are usually present, thus creating a world that is unsafe.

After physiological and safety needs have been met, one is presented with the need for belongingness and love. This includes friendship, family, sexual intimacy, and other types of relationships. People have needs to belong and be accepted (Maslow, 1954). People strive to be part of various types of groups: religious groups, gangs, sports teams, clubs, and so on. They also struggle to find love in the form of intimate relationships, like that found in a husband or wife (Maslow, 1954).

The need for love and belongingness can be complex. The more basic physiological and safety needs revolve more around one's self, rather than other people. The love needs involve both giving and receiving, which requires effort on the part of someone else (Maslow, 1954). One can choose to give love, but without receiving that love in return, one can be left unfulfilled. The needs of love are a continuous process that evolves through life. For example, the love for a spouse varies from that of a child. Once the needs for love and belongingness have been satisfied, or have been satisfied to a certain extent, a new type of need emerges.

In Maslow's hierarchy of needs, the next level of needs are that of esteem. These needs come after physiological, safety, and the need for love. Maslow (1954) classified the need for esteem in two subsidiary sets. The first is the desire for achievement, mental strength, competence, and confidence, all of which are associated with one's self. The second set of esteem needs is engulfed by the desire for reputation, social status, recognition, and prestige, all of which are related to other people.

Not all people are able to reach this level of respect or gain the level of esteem needed to progress to the final motivational need. Some spend their entire adult lives motivated by the needs of love and esteem (Maslow, 1954). For those who do gratify their physiological, safety, love, and esteem needs, they can become motivated by the need of self-actualization.

The need for self-actualization is not realized until all other needs have been met or mostly met. This need is characterized by insight, consciousness, and awareness. Self-actualization is the desire for self-fulfillment. Maslow (1954) phrased it "as the desire to become more and more what one is, to become everything that one is capable of becoming" (p. 92).

Maslow's theory of motivation and satisfying needs is not as simple as having one need fulfilled so that another may emerge. Motivations can become very complex. A person's needs may only be partially fulfilled or motivations may come from a combination of different needs.

A person does not have to completely satisfy one level of needs before the next level surfaces. According to Maslow (1954), "most members of our society who are normal are partially satisfied in all their basic needs and partially unsatisfied in all their basic needs at the same time" (p. 100). For example, one may satisfy 90% of their physiological needs, 75% of their safety needs, 50% of their love needs, 40% of their esteem needs, and only 20% of their self-actualization needs. The emergence of needs is a gradual process, which is constantly changing.

In addition to partially satisfying needs, one may be motivated by a host of different needs. Maslow (1954) stated that, “within the sphere of motivational determinants any behavior tends to be determined by several or all of the basic needs simultaneously rather than by only one of them” (p. 102). It is possible that two or three needs could be the reason for one particular action. The act of eating could be carried out to fulfill the need of hunger and the need of comfort. The act of sex could be initiated for the desire of intimacy and the need for power or acceptance. Joining a religious group could be motivated by both safety needs and the need to belong. All acts are not just dominated by one need. Many times, it is a combination of needs that causes us to act.

Consumer Behavior

Maslow posited that human behavior and decision-making are motivated by one of the five levels of needs. Applied to marketing, consumers relate goods and services to one of these levels of needs. As Thompson (2019) explained,

> Non-essential services -- massage treatments or custom tailoring, for example - may be marketed successfully to those in the fourth or fifth level of Maslow's hierarchy because those people are driven by the needs for increased self-esteem and realizing their full potential. The same marketing campaign is unlikely to appeal to those on the first level, as they are driven by the most basic of human needs: food, water and other elements of survival. (para. 3)

The same concept can be translated to shelter and living arrangements. Shelter can be viewed as the very lowest level of need, physiological, or one of the higher levels of needs. For some, shelter may only need to meet the very basic needs; a place to protect

them from the elements. For others, safety may be the main focus, including safety from criminals, safe building structures, and health safety. Once someone is able to acquire these two levels, the needs of love may become important. Many people want to live close to family or friends or strive to become part of a neighborhood. Shelter can even move above these basic needs and become about self-esteem. Shelter or your home can demonstrate achievement, social status, and reflect on your reputation. At the very highest level, self-actualization, a person may even have multiple homes, including homes specifically for vacation.

When consumer behavior is viewed through the lens of the hierarchy of needs it becomes clear why a person may choose to forgo the purchase of a home and focus on financial security. An individual who has accumulated a large amount of student debt may become more concerned for financial security, a lower need, than the social status that comes with owning your own home. Renting or living with a relative may be very appealing when one is struggling to gain financial security.

Literature Review

The first part of this chapter was devoted to explaining the conceptual framework associated with consumer behavior and the tug and pull relationship consumers have with varying needs. The remainder of this chapter is devoted to the literature review, including a thorough analysis of the trends in student loan debt, the current housing market conditions for first-time home buyers, and any overlap that may exist. The literature review is organized into three main parts:

Part 1: Rise in Student Loans

Part 2: Decrease in First-Time Home Buyers

Part 3: Connection between Student Loans and Purchasing Houses

Part 1: Rise in Student Loans

Student debt in the United States totals over $1.6 trillion and affects more than 40 million people (Bustamante, 2020). The average debt at graduation in 2019 was $28,950 (Institute for College Access & Success, 2020). Student debt is at an all-time high, surpassing all other types of nonmortgage debt.

Student debt has more than tripled over the past 15 years. In 2004, the total student debt in the United States was $364 billion. By 2020, it had reach more than $1.6 trillion. This averages to an increase of nearly $82.2 billion per year (Brown et al., 2015; Bustamante, 2020). In 2020, more than 80% of this debt is owed by borrowers under 45 years old. Those above age 44 made up less than one-fifth of the debt.

Student debt continued to rise, even after the Great Recession. All other types of debts declined after the Great Recession, including mortgages, credit card debt, automobile loans, and home equity lines of credit (Brown et al., 2015). Student loan debt is now the second largest form of household debt, next to mortgages (Bustamante, 2020).

Both the number of borrowers and the average debt per person has contributed to the growth of student loan debt. “Between 2004 and 2012, the number of borrowers increased by 70% from 23 million borrowers to 39 million” (Brown et al., 2014, p. 6). This increase can be explained by multiple factors. First, more people are attending college, thus more people are borrowing money to pay for college (Desrochers & Sun, 2015). Second, students are taking longer to graduate from college. Many students now

spend more than four years at college. Third, more students are attending graduate school or pursuing a higher-level degree (Gonzales, Allum, & Sowell, 2013).

Not only are there more students going to college, the average student is securing more debt. According to the Institute for College Access and Success (2020), the average debt rose 56% from 2004 to 2019. In 2004, the average debt was $18,550 and in 2019 this increased to $28,950. This increase is nearly double the rate of inflation for the same time period.

The increase in student debt can be contributed to a combination of factors, including rising tuition and fees and decreasing government aid. In 2001-2002, the average cost for tuition and fees for a private nonprofit four-year institution was $23,560. In 2006-2007, this had increased to $26,380 and in 2016-2017 to $33,480. This is an increase of $9,920 or 42% in fifteen years (College Board, 2016).

Similar trends can also be noted in tuition and fees for public four-year institutions and public two-year institutions. In 2001-2002, the average cost for tuition and fees for a public four-year institution was $5,110 and $2,180 for a public two-year institution (College Board, 2016). Public four-year institutions increased 89% over the next fifteen years, while two-year institutions increased 38% (College Board, 2016).

Tuition and fees have increased, in part, by declining state investment in higher education. According to the Institute for College Access and Success (2020), the share of public college funding by states has declined over the last decade. This decrease in funding created a gap, which was passed on to the students. According to the Institute for College Access and Success (2020),

> Analysis showed that cuts in state funding likely contributed to the increase in student debt over the past several decades, with declines in state funding leading to increases in both tuition and accumulated debt for four-year college students. The report found that a $1,000 increase in state appropriations per student results, on average, in a decrease in in-state tuition of $483 and a decrease in out-of-state tuition of $713, at public four-year colleges. (p. 8)

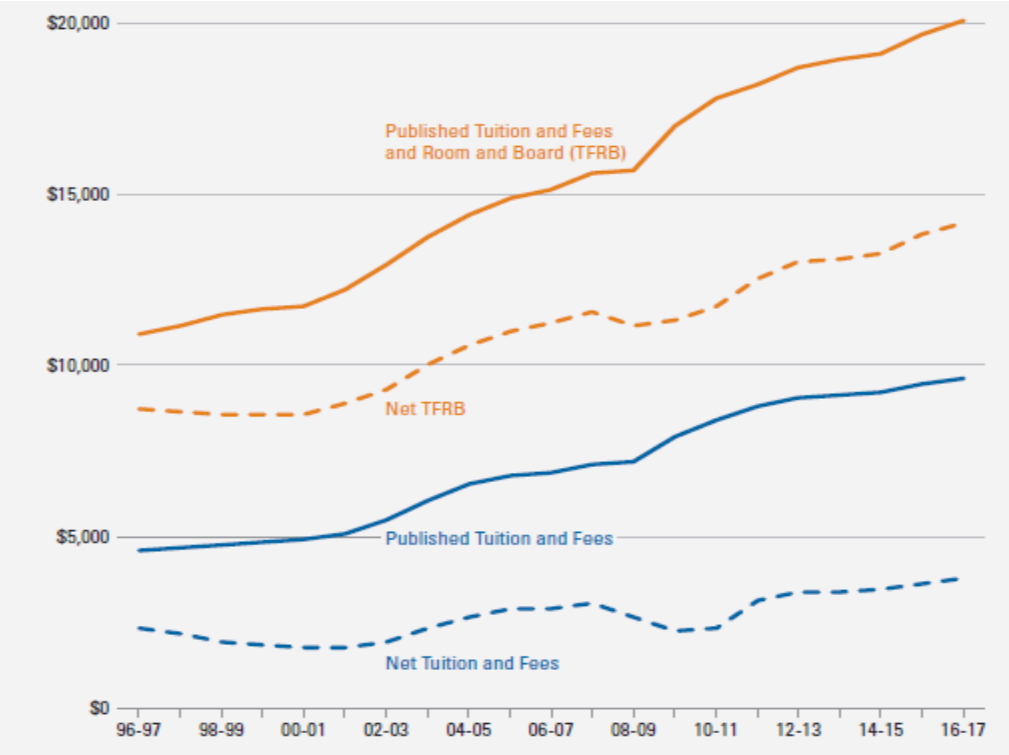
At the same time the government reduced their investment in higher education, they also reduced federal aid students were receiving. During the Great Recession, grant aid and education tax credits cushioned the growth of increasing tuition cost (College Board, 2016). However, this cushion has dissipated over time. Financial aid has failed to keep up with the same increases as tuition prices. "Increases in financial aid only covered two-thirds of the increase in tuition and fees between 2011-2012 and 2016-2017 for the average nonprofit college student and much less for those enrolled in the public sector" (College Board, 2016, p. 7).

Due to the increase in tuition costs and fees, decreased government investment in higher education, and the lack of increases in financial aid, the overall net prices students are actually paying has increased. The net tuition and fee price paid by full-time students at public four-year institutions and private nonprofit four-year institutions have both increased over the past several years. As seen in Figure 2, the average tuition and fees for in-state students at public four-year colleges and universities increased by $2,790 between 2006-2007 and 2016-2017 (College Board, 2016). The average cost in 2016-2017 was $14,210 in charges for tuition and fees and room and board combined, net of

grant aid and tax benefits (College Board, 2016). As seen in Figure 3, the average net tuition and fees and room and board was $26,080 for private nonprofit four-year colleges and universities, which is an increase of 6% over the past decade (College Board, 2016).

Figure 2

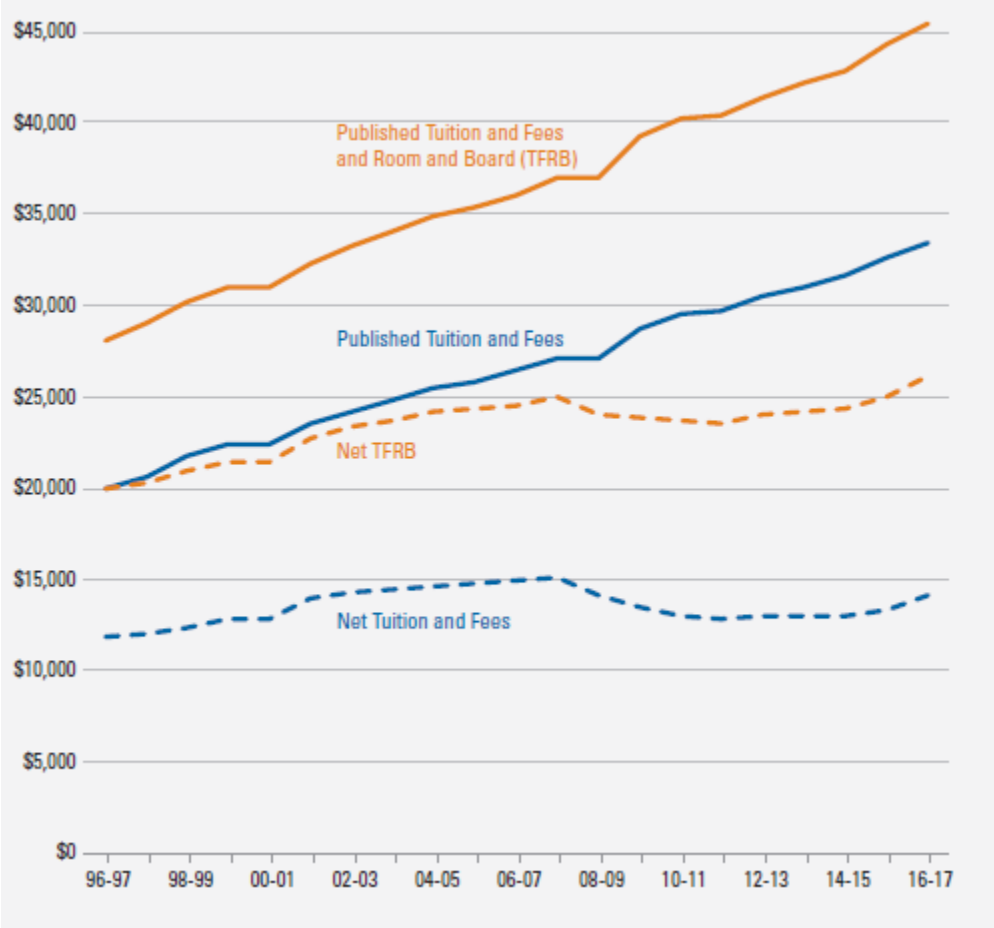
Average Published and Net Prices in 2016 Dollars, Full-Time In-State Undergraduate Students at Public Four-Year Institutions, 1996-97 to 2016-17



Note. From Trends in College Pricing 2016, by College Board, 2016 (https://research.collegeboard.org/pdf/trends-college-pricing-2016-full-report.pdf).

Figure 3

Average Published and Net Prices in 2016 Dollars, Full-Time Undergraduate Students at Private Nonprofit Four-Year Institutions, 1996-97 to 2016-17



Note. From Trends in College Pricing 2016, by College Board, 2016 (https://research.collegeboard.org/pdf/trends-college-pricing-2016-full-report.pdf). Copyright 2016 by College Board.

With increased prices, more college students, and less government support, the increase in student debt was inevitable. With this increase in student debt has also come

an increase in payment difficulties. Though some borrowers have delayed repayment by continuing their education, deferrals, forbearance, and through income-based repayment plans, others have had no choice but to become delinquent or default.

As of the 3rd quarter of 2019, 12% of federally managed student loans were in default, totaling $155 billion. This is an increase of 1% from 2018 and 2% from 2017 (Stolba, 2019). Another 20% of student loans are in forbearance or deferment (Stolba, 2019). According to Stolba (2019), only half of all student loans are currently in repayment and a very small amount, less than 3%, are in a grace period.

Though many students start college and accumulate debt, not all of them leave with a college degree.

> Thirty-seven percent of adults with college student loans outstanding, not enrolled, and less than an associate degree are behind. This compares to 21 percent of borrowers with an associate degree. The delinquency rate is even lower among borrowers with a bachelor's degree (10 percent) or graduate degree (6 percent). (Board of Governors of the Federal Reserve System, 2020, para. 6)

Many students are unable to complete their degree, but still leave college in debt. According to the Board of Governors of the Federal Reserve System (2020), students that leave college without a degree are more likely to become delinquent.

Part 2: Decrease in First-Time Home Buyers

Homeownership rates have remained above 60% for more than the last 30 years. However, rates are currently on a downward trend. At the turn of the 21st century rates had reached 67.5% and continued to rise until 2005 when homeownership was at its

highest rate of 69% (Statista, 2021). Since 2005, homeownership rates have steadily dropped and continue to decline. In 2014, homeownership rates dropped below 65%. At the end of the 4th quarter of 2016, rates had declined to 63.7% (Statista, 2021).

The number of houses sold in the United States has also changed dramatically over the past few decades. In 2000, 877,000 houses were sold in the United States (Statista, 2021). The rate of houses sold in the United States increased 46% by 2005, reaching 1,283,000. Since 2005, a much different picture has been painted. Sales plummeted, reaching a low in 2011 of 306,000 houses. From 2011 to 2016, less than half of the downfall has been recovered.

The National Association of Realtors (2017) determined buyers 36 and younger continue to be the largest generational group in the housing market at 34%. This is followed by 37 to 51 year olds at 28% (National Association of Realtors, 2017). The median age of this group was 43. Buyers 52 to 61 accounted for 16% of the market with a median age of 57 (National Association of Realtors, 2017). The age range with the highest household income with a median income of $106,600 are buyers 37 to 51 years old (National Association of Realtors, 2017). This is followed by 52 to 61 year olds with a median income of $93,800 (National Association of Realtors, 2017). All the other age ranges fall below the overall median income of $88,500 (National Association of Realtors, 2017).

Taking a closer look at the trends in housing, it can easily be noted that first-time home buyers are responsible for a large portion of the homes sold. “First-time homebuyers are the lifeblood of our current housing system. They allow existing

homeowners to sell and move to a new town, a retirement community, or to the bigger house next door" (Bai, Zhu, & Goodman, 2015, para. 1). Therefore, it is understandable, why a drop in the percentage of first-time home buyers is alarming. According to National Association of Realtors (2017), first-time homebuyers made up 45% of the residential market in 2009. This dropped to 39% in 2010 and to 33% in 2011, before reaching a low in 2013 and 2014 of 29% (National Association of Realtors, 2017).

The majority of first-time home buyers are 36 years old or younger. In 2016, this group accounted for 66% of first-time home buyers (National Association of Realtors, 2017). The second largest age group of first-time home buyers in 2016 was 37 to 51 year olds, accounting for 26% of the market. This was followed by 52 to 61 year olds at 13% and 62 to 70 year olds at 7%.

Buyers 36 and younger have a median income of $82,000 and typically finance the purchase of their home. In 2016, 98% of buyers 36 and younger financed their home purchase (National Association of Realtors, 2017). With age, this rate of buyers financing their home dramatically decreases. Buyers between the ages of 71 to 91 only finance the purchase of their home 58% of the time.

The percent of home financing also decreases with age. Buyers 36 and younger tend to finance the majority of the cost of their house. In 2016, buyers 36 and younger financed 93% of the cost of their home (National Association of Realtors, 2017). More than 40% of this group financed 95% or more of their home cost. Comparatively, buyers older than 70 only financed 76% of their home purchase price.

One of the biggest challenges buyers face when securing financing is sufficient funds for a down payment. “Rising rents and repaying student-loan debt makes saving for a down payment more difficult, especially for young adults who’ve experienced limited job prospects and flat wage growth since entering the workforce” (Yun, 2014, as cited in Christie, 2014, para. 5).

The source of down payment for the majority of buyers is savings. More than 60% of buyers who make a down payment use their savings as their source of down payment (National Association of Realtors, 2017). This is even higher for buyers 36 and younger. Approximately 75% of buyers 36 and younger use their savings as the source of their down payment.

Saving for a down payment delays many buyers from buying a house. In 2016, approximately 30% of buyers reported that it took more than 2 years to save for a down payment (National Association of Realtors, 2017). Previous debt is one of the major reasons buyers were unable to save for a down payment. On average, debt delays buyers 3 years from saving for a down payment. In more than 20% of the situations, buyers needed more than 5 years.

Various types of debts impacted the savings ability of buyers. According to the National Association of Realtors (2017), student loans delayed the largest number of buyers from purchasing a home. Nearly half, or 49%, reported student loans as a reason for delayed savings (National Association of Realtors, 2017). This percentage was even higher for those buyers 36 years old and younger at 55% (National Association of

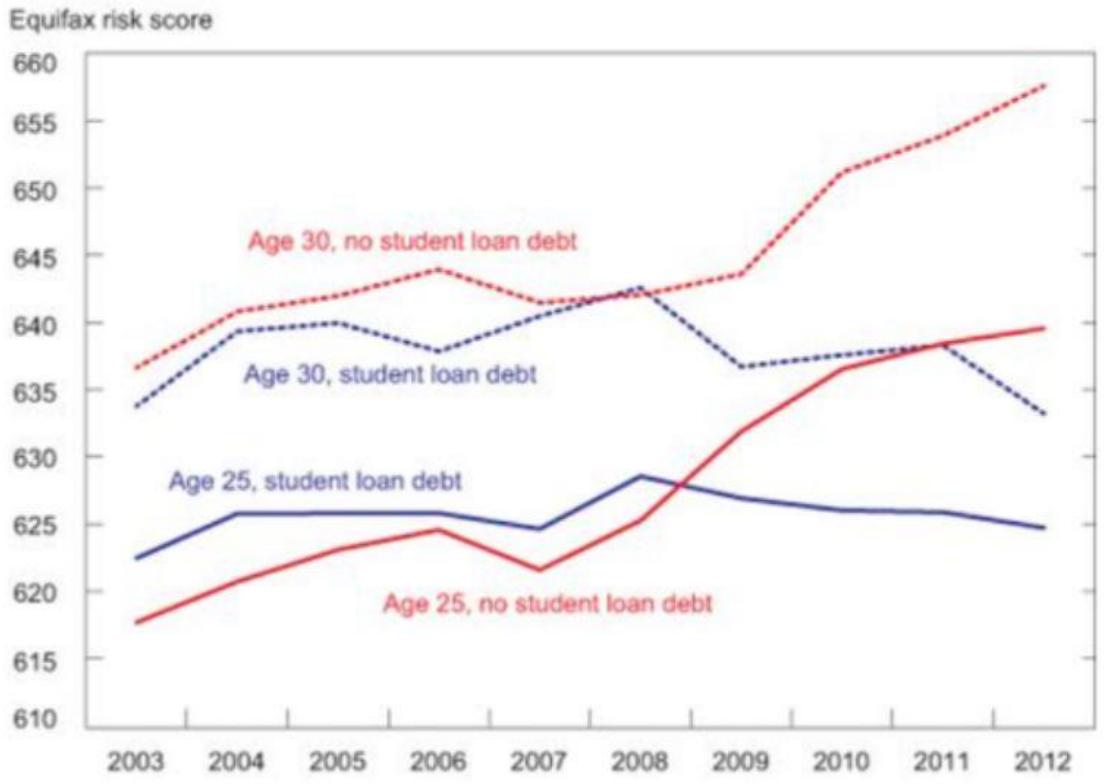
Realtors, 2017). The second highest type of debt to delay savings was credit card debt at 40%, followed by car loans 34% (National Association of Realtors, 2017).

Buyers that had student loan debt reported a median student loan debt of $25,000 (National Association of Realtors, 2017). In 2016, buyers ages 37 to 51 had a median amount of student loan debt of $30,000. Buyers 36 and younger had a median student loan debt of $25,000, whereas 52 and older had a median student loan debt of less than $20,000 (National Association of Realtors, 2017).

Not only do buyers with student loan debt experience high debt to income ratios, their credit scores are suffering too. Ten years ago, a 25 year old with no student loan debt, on average, would experience a lower credit score than a 25 year old with student loan debt (Brown & Caldwell, 2013). However, as seen in Figure 4, this trend reverses in 2008 with 25 year olds with no student loan debt out scoring 25 year olds with student loan debt.

Figure 4

Average Risk Scores for Borrowers and Nonborrowers at Ages 25 and 30



Note. Adapted from "Measuring Student Debt and Its Performance." by M. Brown, A. Haughwout, D. Lee, J. Scally, and W. van der Klaauw, 2015, Upjohn Institute for Employment Research, pp. 37-52 (https://doi.org/10.17848/9780880994873.ch3). CC BY-NC.

In the beginning of 2008, a typical 25 year old with student loan debt would have experienced a credit score higher than a 25 year old with no student loan debt. However, the roles reverse in late 2008 and by 2012 a 25 year old with no student loan debt is 15 points above that of a 25 year old with student loan debt (Brown & Caldwell, 2013). The

trend is similar with 30 year olds. By 2012, the average 30 year old with no student loan debt had a credit score nearly 25 points higher than a 30 year old with student loan debt.

Even with the downward trend of sold houses, buyers generally viewed purchasing a house as a good financial investment. Of all the buyers, 82% said that buying a house was a good financial investment, 6% said it was not a good investment, and 12% wasn't sure (National Association of Realtors, 2017). The population of prospective first-time home buyers desire to own a home as much as the general population. "According to NHS data, the substantial majority of renters age 25-34 say that owning makes more sense than renting from a financial perspective. A majority also agree that owning makes more sense than renting from a lifestyle perspective" (Shahdad, 2015, para. 2).

For the majority of renters, including renters ages 25 to 34, their personal financial situation needs to improve prior to purchasing a house (Fannie Mae, 2015). According to Fannie Mae (2015), almost half of all renters cited personal financial reasons as the most important factor when determining the right time to buy a home. This percentage was even higher for renters ranging in ages 25 to 34 (Fannie Mae, 2015). The second most important factor to renters for determining the right time to buy a home was lifecycle reasons, such as marriage or having children, followed by career factors, market conditions, and economic conditions (Fannie Mae, 2015).

Economists believe the key to recovering the housing market is increasing the number of houses sold to first-time home buyers. According to the National Association of Realtors (2016) the missing link to housing recovery is the absence of first-time home

buyers. Prospective first-time home buyer's report they still want to purchase a home and believe that it is a good investment, their financial situation just needs to improve prior to buying a house (Fannie Mae, 2015).

Part 3: Student Loan Debt and Residential Market

Young adults are borrowing large amounts of money to attend college, but are they aware how this will affect the rest of their lives? When most think of a college degree, they envision a successful career, large incomes, and a lasting impact on society. However, most don't consider the negative impacts going to college could have on one's life. Akers and Chingos (2014) analyzed data from two sources that link student survey responses to administrative records on costs and borrowing and their findings suggest that a significant portion of undergraduate students do not know how much their education costs them or how much debt they have taken on as a result. They reported that 52% of respondents were not able to correctly identify within a $5,000 range what they had paid for their first year of college (Akers & Chingos, 2014). In addition, almost half of first-year students in the United States underestimate the amount of student debt they have accumulated. "Among all first-year students with federal loans, 28% reported having no federal debt and 14% said they didn't have any student debt at all" (Akers & Chingos, 2014, p. 1).

According to Indiviglio (2011), "Higher education is supposed to enhance a nation's growth, but with such an enormous debt burden, graduates might not be able to spend and invest enough to allow that growth to occur (para. 8)." Many researchers conject that student loans are crippling our youth and preventing young adults from

reaching financial independence and stability (Dynarski & Kreisman, 2013). The decision to accept student loans affects several later life decisions, including career choices, marriage, home ownership, and retirement. Wermuth (2017) references several studies to demonstrate students with large amounts of student debt are prone to postpone home purchases (Brown et al., 2015), delay staring families (Gicheva, 2011), and save less for retirement (Gicheva & Thompson, 2015).

High student loan payments may affect the first few decades of an adult's life. A survey recently conducted by American Student Assistance (2015) found that many students are struggling with paying their bills and the daily necessities. Furthermore, the survey found that student loan debt hampered young adult's ability to further career. More than 45% of respondents agreed or strongly agreed that student loan debt was hampering their career (American Student Assistance, 2015).

Student loan debt can also influence homeownership decisions. An American Student Assistance survey (2015) found that more than half of students report that student loans impacted their ability to purchase a home. Some students choose to avoid tacking on additional debt with the purchase of a home, while others are not able to qualify for a mortgage (Dynarski & Kreisman, 2013). Even though some students qualify for a mortgage even with their student debt, debt aversion may dissuade them from purchasing a home. Others are unable to qualify for a loan due to poor credit scores or high debt to income ratios.

Brown and Caldwell (2013) show a glaring difference between 2003 and 2013 credit scores of those with student loan debt and those without. In 2003, student loan

borrowers and non-student loan borrowers showed essentially no difference in their credit scores. In 2012, a noticeable difference was reported. A 30 year old with student loan debt had an average credit score that was 24 points lower than a 30 year old without student loan debt.

A major factor affecting credit scores is loan delinquencies. Approximately 30% of student loan borrowers in repayment are delinquent on their payments (Wang & Boone, 2014). Delinquent loans have adverse reactions on student's credit history causing their credit scores to decline. Thus, making securing a mortgage very difficult and even more expensive (Boatman, Evans, & Soliz, 2014).

Student loan borrowers may still experience difficulties obtaining a mortgage even if they are diligently paying their student loans. A large amount of outstanding debt will affect a borrower's debt to income ratio, which is a key piece of information lenders look at (American Student Assistance, 2015). A debt to income ratio considers all monthly payments, including loan payments, taxes, insurance, and compares that to your monthly income. To qualify for a home mortgage, lenders typically require a debt to income ratio of 36% or lower. Consider the following example given by American Student Assistance (2015):

> The national median existing-home price as of February 2015 was $202,600. With a 3.77% interest rate (the average for a 30-year fixed rate mortgage as of March 2015), a monthly mortgage payment with average taxes34 and insurance, would be about $ 1192.13 for a home mortgage if the entire housing cost is mortgaged over thirty years.

The average student loan borrower in 2013 graduated with $28,400 in loans. If paid back over a standard 10-year period with an interest rate of 6.8% for unsubsidized Direct or Stafford loans, the monthly payment would be approximately $ 326.83.

The average amount of credit card debt for 25 to 34 year olds is $6,255 with an average interest rate of 17% and required monthly payment of interest plus 1% of the balance or $151.16.

A 2013 college graduate with an average salary of $ 45,327 would bring home approximately $ 3,777.25 a month before taxes.

This means that the average amount paid for a mortgage, student loans, and credit card debts equals $1670.12, or 44.2% of the average college graduate's take home pay—8.2% higher than the maximum debt-to-income ratio required to qualify for a typical home mortgage, and with no room left for an auto loan or any other type of installment loan.

Given this example, it is not surprising, that the rate of young adults living with their parents has increased. From 2007 to 2012 there was a 46% increase in the number of 18 to 31 year olds living with their parents (Wang & Boone, 2014).

With the lack of financial stability in young adults, experts speculate that high student loan debt payments are hampering the economy, particularly the housing market (American Student Assistance, 2015). The Federal Reserve Bank of New York (2013) reported that for the first time in over a decade 30 year olds with no history of student loans were more likely to purchase a home than 30 years old with student loans.

First-time home buyers are considered the first layer in the housing market and changes in their purchasing behavior affects the rest of the economy. “Approximately $60,000 in direct and indirect spending is added to the economy for every home that is purchased, and in an average year, home sales generate more than 2.5 million private sector jobs. Because they are seen as the first run of the housing ladder, young adults who cannot become first-time home buyers create a ripple effect” (American Student Assistance, 2015, p.9).

Palacios (2014) predicted that 414,000 housing transactions would be lost in 2014 due to student debt resulting in an $83 billion deficit. Palacios estimates that for every $250 per month in debt repayment, purchasing power decreases by $44,000. In 2014, Palacios reported 5.9 million households under the age of 40 had student debt payment exceeding $250 per month.

The conclusion that student loan debt is negatively affecting home buying among young adults is largely based on the correlation of two historical trends: the rise of student loans and the decrease of first-time home buyers. However, very little research has been conducted to examine the link between student loan debt and purchasing a home. Of the research that has been completed, the results are not conclusive.

Cooper and Wang (2014) examined the impact of student loan liabilities on individuals’ homeownership status and wealth accumulation using data from the Panel Study of Income Dynamics (PSID). They determined that student loan debt appears to delay buying a house but does not permanently deter it. They also used regression analysis to determine that there was a strong negative correlation in the cross section

between student loan debt and total wealth accumulation among homeowners. The negative effect of student loan debt on wealth holdings was more pronounced for homeowners than for renters.

Cooper and Wang (2014) then used data from the 1988 National Educational Longitudinal Survey to re-examine the relationship between student loan debt and future homeownership. Using a linear probability model, they analyzed the relationship between homeownership and student debt. Their analysis controlled for a host of variables, including years since they finished or left school, geography, education level, race, gender, family income, and degree obtained. Their results indicated that individuals with student loan debt are 12 percentage points less likely to own a home than those without student loan debt. However, their analysis had conflicting results for the effect of student debt depending on how long someone had been out school.

Houle and Berger (2015) also tested the empirical claim that student loan debt deters young adults from buying a home. To test this claim they used individual-level longitudinal data from the NLSY97. They focused on three outcomes, including: home ownership, holding a mortgage, and the amount of mortgage debt reported by respondents. The study only compared young adults who had attended at least some college and controlled for a host of different variables.

Houle and Berger (2015) used three specifications of regression models for each of the outcomes. First, they estimated reduced form ordinary least squares regressions in which each outcome was regressed on average cost of institutions attended by a respondent and the full set of controls. Second, they estimated ordinary least squares

models in which the outcomes were regressed on respondent-reported total education debt and the full set of controls. Finally, they used two-stage least squares to estimate instrumental variables in which total educational debt was first predicted by average cost of the institution attended, then associations between the homeownership measures and the predicted value of educational debt were estimated. Houle and Berger (2015) ensured that their model was exogenous to obtain unbiased results.

In both the reduced form and instrumental variable models, Houle and Berger (2015) found an inverse relationship between student loan debt and home ownership, holding a mortgage, and the amount of mortgage debt owed. Though their results were statistically significant, the association was very small, thus providing limited evidence that student loan debt is the major cause in the home-ownership decline for young adults.

Celik (2015) looked at young adults retreating from the housing market from a different perspective. Rather than trying to establish a correlation and causality between young adults with student loan debt and homeownership, Celik examined young adults' access to credit markets with and without student loan debt.

Celik (2015) used data from the Survey of Consumer Finance in 2007 and 2009 to examine two hypotheses: Student loan debt has an independent and significantly positive effect on a young household's likelihood to be turned down in credit applications; Student loan debt has an independent and significantly positive effect on a young household's likelihood to be discouraged to apply for credit. Through examination of these hypotheses, Celik hoped to add valuable insight into the reasons why young households with student debt might retreat from the housing market.

Celik (2015) rejected both of the hypotheses. He concluded that student loan debt did not seem to have any negative effects on young households without a college degree. In addition, it did not seem to increase their chances of being turned down in the housing application process. However, households with a college degree appeared to be negatively affected by their student loan debt. Education debt had no significant effect on discouraging a household to apply for credit.

Summary and Conclusions

The literature review was divided into three main parts: trends of student loan debt; current housing market conditions for first-time home buyers; and connections between student loans and purchasing a home. Student loan debt has risen drastically, well beyond the rate of inflation. While student debt is at an all-time high, the housing market has seen drastic declines, particularly for first-time home buyers.

Though many economists have theorized that high student loan debt payments are hampering the economy, very little research has been conducted to examine the link between student loan debt and purchasing a home. Of the research that has been completed, the results are not conclusive. Cooper and Wang (2014) determined that student loan debt appears to delay buying a house but does not permanently deter it. Houle and Berger (2015) found very limited evidence that student loan debt is the major cause in the home-ownership decline for young adults. Contrary, to both of these studies, Celik (2015) found educational debt had no significant effect on discouraging a household to apply for credit.

A gap was filled by researching the correlation between student loan debt and first-time home buyers. This project addressed an under researched area of finance with mixed conclusions. The results of this study provided needed clarification on the reduced number of first-time home buyers during a time of economic instability. Insights from this study can aid the government, persons in the financial market, and persons in the residential market understand the reasons behind this residential phenomenon. In addition, the results can be used to develop financial planning tools to aid our country as we push past the current recession.

Chapter 3: Research Method

The purpose of this quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. It is clear that student loan debt is on an upward trend. It is also clear that the rate of first-time home buyers has decreased. However, there has been very little research to determine if higher student loan debt is a major cause of lower first-time home buyers. This study adds to the limited research available on this topic by examining the relationship between student loan debt and home ownership.

Major sections in this chapter include research design and rationale; methodology, including population, sampling procedures, data collection, archival data; and the data analysis plan; and threats to validity, including external validity, internal validity, construct validity, and ethical procedures.

Research Design and Rationale

In this study, longitudinal data from the NLSY97 was used to examine the relationship between student loan debt and home buying. This study adds to the limited existing literature on this topic and gives a clearer indication if student loans influence home ownership. The study advances the work that Houle and Berger began in 2015.

Using the longitudinal data from NLSY97, I followed the most recent cohort of college-going young adults to examine if student loan debt has an effect on subsequent home buying. The independent variable was self-reported student loan debt, generally defined as the amount of educational debt, including money borrowed from government, private institutions, friends, and/or family held by individuals at the age of 30. The

dependent variable was home ownership. Three key measures were examined in regard to home ownership. The first was whether the individual and/or their spouse owned a home at the age of 30. The second was whether the individual and/or their spouse held a mortgage. The third was the amount of the mortgage debt owned by the individual and/or spouse. By exploring both home ownership and mortgage debt, I can determine if student loans are deterring home ownership or leading young adults to purchase less expensive homes, thus leading to less mortgage debt.

I controlled for a variety of factors that are associated with both homeownership and educational debt. These included race, urban locale, respondent's living arrangement (such as living with parents), respondent's marital status, whether the respondent is employed, whether the respondent has children, respondent's highest level of education, and respondent's household income.

Research Questions and Hypotheses

RQ1: What is the relationship between home ownership and student loan debt for young adults?

$H_0$1: There is no relationship between student loan debt and home ownership.

$H_1$1: There is a relationship between student loan debt and home ownership.

RQ2: What is the relationship between mortgage amount and student loan debt for young adults?

$H_0$2: There is no relationship between student loan debt and mortgage amount.

$H_1$2: There is a relationship between student loan debt and mortgage amount.

The correlation between student loan debt and home ownership for young adults who have attended postsecondary institutions was examined in this study. Linear regression was used to determine if there is a relationship between student loan debt and home ownership. Linear regression is consistent with determining if there is a relationship between two quantitative variables (Basu & Kwun, 2014; Cramer & Howitt, 2004; Isaac & Michael, 1995). For each outcome, ordinary least squares models were estimated, and outcomes were regressed on respondent-reported total educational debt and the set of control variables.

This design is consistent with Houle and Berger's (2015) recent research on student loan debt discouraging home buying among young adults. This study expounds on their exploration of using individual-level longitudinal data to explore whether student loan debtors are less likely to buy homes or take on mortgages than their nonindebted counterparts. Houle and Berger used 2011 data from the NLSY97. At this time, respondents of the survey would have been between the ages of 26 and 30.

The NLSY97 surveyed young adults at the age of 25 and then again at the age of 30 regarding debts, assets, and homeownership. At the time of Houle and Berger's (2015) study, the majority of respondents had not turned 30 years of age, thus not completing the second part of the survey.

Now, all participants are over the age of 30 and have completed both parts of the survey, giving a much larger sample size. Houle and Berger (2015) concluded a very small, statistically weak association between actual educational debt and both owning a home and having a mortgage. They also found a somewhat larger and significant

association with mortgage amount. They concluded that each $1,000 of educational debt was associated with $146 less mortgage debt (Houle & Berger, 2015).

Reexamining the relationship between home ownership and student loan debt for young adults gives better insight to whether these findings are valid. The only other study found that compared young adults who attended postsecondary institutions, thus being able to accrue student loan debt, was the research of Cooper and Wang (2014). Cooper and Wang used data from the 1988 National Educational Longitudinal Survey to examine the relationship between student loan debt and future homeownership. They used a linear probability model to analyze the relationship between homeownership and student debt. They controlled for a host of variables, very similar to the variables controlled for in this study, including geography, education level, race, gender, income, degree obtained, and years since participants finished or left school Cooper and Wang indicated that individuals with student loan debt are 12 percentage points less likely to own a home than those without student loan debt. They concluded that 12 percentage points was meaningful economically because the homeownership rate for their sample was approximately 35% (Cooper & Wang, 2014).

No other research studies were found that only compared young adults who attended postsecondary institutions and were thus able to accrue student loan debt. The others studies I found included in a sample population of students who attended postsecondary institutions and those who did not. Expanding upon Houle and Berger's (2015) and Cooper and Wang's (2014) studies add to the very limited literature available on student loan debt and the housing industry.

Methodology

Population

Individual-level data were gathered from the NLSY97 survey. The NLSY97 is a longitudinal project that follows the lives of a sample of American youth born between 1980 and 1984. There was a total of 8,984 respondents in the first round of interviews. Participants ranged in ages from 12 to 17 in the first round of interviews. This ongoing cohort has been surveyed 18 times to date and is now interviewed biennially.

At each interview, respondents are questioned on a whole host of topics, including education, training, achievement scores, employment, household logistics, geography, parental involvement, family processes, childhood experiences, marital status, pregnancy and fertility, income, assets, health, expectations, crime, and substance use. The first calendar year after the respondents turned 25, and then again at age 30, they were asked a series of detailed asset questions, containing debt accumulation. With the last wave of surveys (round 18) all respondents had turned at least 30 years of age and completed the detailed asset questions conducted at age 30. A total of 7,711 of the original 8,984 completed the age 30 asset questions. These 7,711 made up my target population.

Sampling and Archival Data

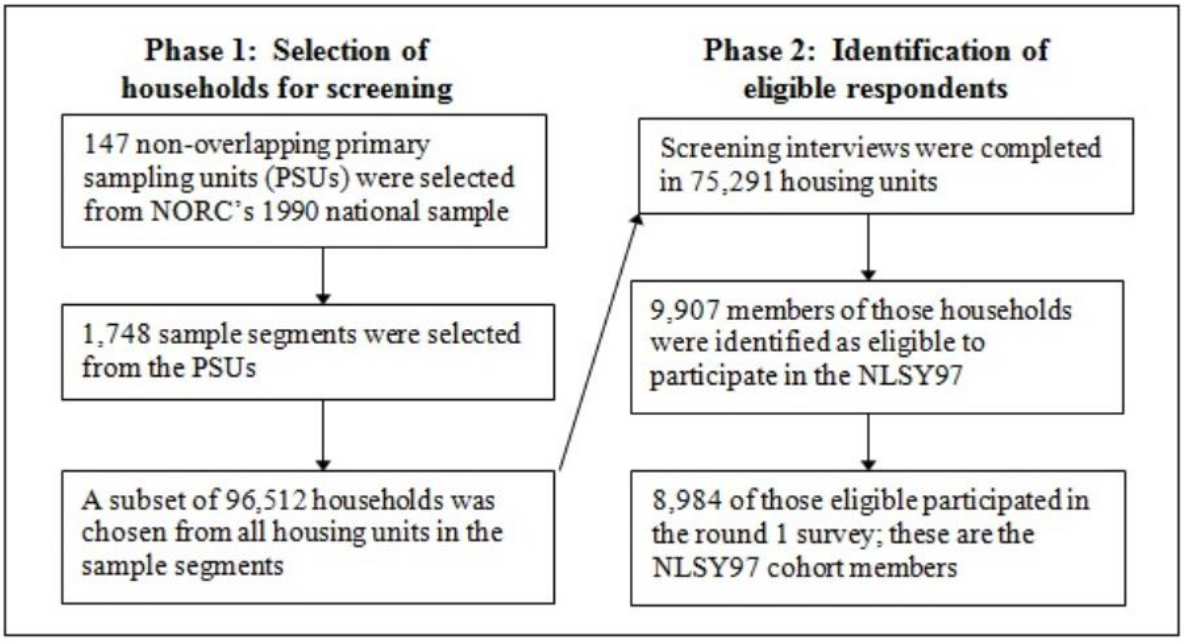
According to the United States Bureau of Labor Statistics (2016), the NLSY97 cohort was comprised of two independent probability samples. The first was a cross-sectional sample, and the second was an oversample of Black and/or Hispanic or Latino respondents. The cohort was selected using these two samples to meet the survey design

requirement of providing sufficient numbers of Black and/or Hispanic or Latino respondents for statistical analysis.

Figure 5 maps the two phases used to select members for the NLSY97 cohort. In the first phase, a list of housing units for the cross-sectional sample and the oversample was derived from two independently selected, stratified multistage area probability samples. This ensured an accurate representation of different sections of the population defined by race, income, region, and other factors. In the second phase, subsamples of the eligible persons identified in the first phase were selected for interview.

Figure 5

NLSY97 Member Selection



Note. Data from "National Longitudinal Survey of Youth 1997 Cohort," by the United States Bureau of Labor Statistics, 2016 (www.nlsinfo.org/content/cohorts/nlsy97). In the public domain.

Access to the NLYS97 survey data is publicly available online through the United States Bureau of Labor Statistics. All data for each cohort are available at no cost via an online search and extraction site that enables researchers to review NLSY variables and create data sets.

A power analysis determined that a sample size of almost 3,000 is more than sufficient. Using G*Power, a power analysis was conducted. Using a small effect size (0.2), along with an alpha of 0.05 and power of 90%, the sample size needed was 207. An alpha of 0.05 and a power of 80% or 90% is typically used in standard research (Hunt, 2015). To ensure that the effect size was detected, the higher power of 90, or beta of 10%, was chosen for the power analysis. A small effect size was chosen to be consistent with the previous study piloted by Houle and Berger (2015). The sample size for this study was much larger than the required sample size needed of 207. Because the data are easily obtainable and extracted, I used all survey responses where participants answered all relevant questions and data were available.

Data Analysis Plan

The purpose of the quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. Student loan debt has increased significantly over the past several years (Institute for College Access and Success, 2020). Student loan debt totals $1.68 trillion and has grown more than six times faster than the nation’s economy (Bustamante, 2020). At the same time, there has been a historic drop in first-time home buyers (The National Association of Realtors, 2020). Many experts speculate that since the demographics of student loan debt holders is

so similar to first-time home buyers the decrease in residential real estate is directly related to high student loan debt (Cooper & Wang, 2014; Houle & Berger, 2015; Hunt, 2015). The decreasing rate of first-time homeowners is creating significant issues within the housing industry and the financial viability of home builders. However, there is little information available to know if there is a relationship between student loan debt and home ownership. To address this gap, a quantitative approach was used to examine if student loan debt is associated with subsequent home ownership for young adults.

The independent variable student loan debt was generally defined as the amount of educational debt, including money borrowed from government, private institutions, friends, and/or family held by individuals at the age of 30. The dependent variable home ownership was generally defined as whether the individual and/or his or her spouse owned a home at the age of 30. In addition to home ownership, the study explored the relationship between education debt and whether the individual and/or his or her spouse had a mortgage at the age of 30 and the amount of the mortgage at age 30. An analysis of these variables identified any correlations and increased our understanding of the decline in first-time home buyers.

Using Microsoft Excel with the XLSTAT add-on statistical software, the study regressed the outcomes on the respondent's total educational debt and full set of controls using Ordinary Least Squares (OLS) models. "When your linear regression model satisfies the OLS assumptions, the procedure generates unbiased coefficient estimates that tend to be relatively close to the true population values (minimum variance). In fact, the Gauss-Markov theorem states that OLS produces estimates that are better than

estimates from all other linear model estimation methods when the assumptions hold true." (Frost, 2019, para. 10). These assumptions included: the regression model is linear in the coefficients and the error term, the error term has a population mean of zero, all independent variables are uncorrelated with the error term, observations of the error term are uncorrelated with each other, the error term has a constant variance and no independent variable is a perfect linear function of other explanatory variables and the error term is normally distributed. If these assumptions hold true, the OLS procedure creates the best possible estimates.

This research provided the answer to the research questions below:

RQ1: What is the relationship between home ownership and student loan debt for young adults?

$H_0$1: There is no relationship between student loan debt and home ownership.

$H_1$1: There is a relationship between student loan debt and home ownership.

RQ2: What is the relationship between mortgage amount and student loan debt for young adults?

$H_0$2: There is no relationship between student loan debt and mortgage amount.

$H_1$2: There is a relationship between student loan debt and mortgage amount.

Individual-level longitudinal data was acquired from the NLSY97 cohort. According to the United States Bureau of Labor Statistics (2016), the NLSY97 cohort is a project that follows the lives of a sample of American youth born between 1980 and 1984; 8,984 respondents were ages 12 to 17 when first interviewed in 1997. Of the 8,894 respondents that were initially interviewed, 7,711 completed the survey at age 30. At age

30 a set of detailed asset questions were asked. Questions included a broad range of topics including all assets and debts. Asset questions included asking respondents if they or their spouse owned a home. Debt questions included questions relating to all types of educational loans and mortgages, including the amounts of each.

To reduce bias in the statistical analysis, the study controlled for a range of sociodemographic characteristics. This ensured any differences in the null hypothesis between debtors and non-debtors was due to educational debt and not some other characteristic of the two groups. Variables that the study controlled for included: race (White and Black, with other as the reference category), urban locale, geographic location (northeast, south, and west, with north central as the reference category), respondent currently living with parent(s), marital status, employment status, parental status, respondent's highest degree obtained (high school degree, Associate degree, Bachelor degree, Master degree or higher, with no degree as the reference group), and household income.

To clean the data any respondents that did not answer the questions regarding homeownership status or educational debt was excluded from the study. Other continuous variables that were missing were replaced with the sample mean. Any dichotomous or categorical variables that were missing were replaced with zero. This method of cleaning data aligns with the previous study of Houle and Berger (2015).

Results indicated the strength of association between total educational debt and homeownership status, mortgage status, and mortgage amount. The results examined if student loan debt was associated with subsequent home ownership. In addition, it was

also observed if student loan debt was discouraging students from buying a house at all or if it just resulted in purchasing a less expensive home.

Threats to Validity

External Validity

External validity refers to the extent to which results from a study can be applied to other situations, groups or events. Though there were threats to the external validity of this study, the likelihood and overall probability was relatively low. Possible types of external validity threats to this study included testing, sampling bias, Hawthorne effect, and history.

Participants in this study have currently been surveyed 18 times. Participants ranged in ages from 12-17 in the first round of interviews and are now all at least 30 years of age. It was possible that previous interviews could have affected how participants responded to questions when they turned 30 years of age and were interviewed. For the majority of the years, the NLSY97 cohort was interviewed on an annual basis. Being familiar with the questions and knowing what to expect could have possibly affected participants' responses.

The threat of sampling bias was relatively small. The NLSY97 cohort was comprised of two independent probability samples. The first was a cross-sectional sample and the second was an oversample of the Black and/or Hispanic or Latino respondents to ensure the samples met the survey design requirement of providing sufficient numbers of Black and Hispanic or Latino respondents for statistical analysis.

Participants in the study were aware they were being studied so there was a possibility for the threat of the Hawthorne effect. Since participants were aware they were being studied, they could have change their behaviors. Given the length of this study, almost two decades, it is unlikely that a participant would continuously alter their behavior due to being interviewed. The study also covered numerous topics on all aspects of the participants' life, so it is unlikely they let this survey affect multiple aspects.

More likely, was the external threat of history. Given the length of this survey, it is probable that historic events affected participants' answers. Two major historic events that could have affected participants' actions during this timeframe are the actions on 9/11 and the housing market crash of 2008. Both of these events had major impacts on the economy, including interest rates and the housing market.

Internal Validity

Internal validity refers to the degree of confidence that the casual relationship being tested is trustworthy and not influenced by other factors or variables. The biggest threat to internal validity was confounding factors or unexpected factors that influenced the casual relationship of the study. Though smaller, another threat to internal validity was that home ownership was only measured at one point in time, age 30. It is possible, that participants owned a home prior to age 30 and no longer possessed a home due to bankruptcy or some other unknown factor.

To combat confounding factors the study controlled for a variety of factors that are associated with both homeownership and educational debt. These included race, urban locale, respondent's living arrangement (such as living with parents), respondent's

marital status, whether the respondent is employed, whether the respondent has children, respondent's highest level of education, and respondent's household income. Some factors not controlled for in the study included financial literacy, other forms of debt, such as medical or credit card debt, employer provided housing or unexpected income, such as inheritance. While all confounding factors may never be completely accounted for, this study minimized several external influences. Others may be addressed in future iterations of similar studies.

Statistical Conclusion Validity

Statistical conclusion validity refers to reaching an incorrect conclusion about a relationship in your observation. This includes reaching the conclusion that there is no relationship when in fact there is or reaching the conclusion that there is a relationship when in fact there is not. Since this study was using data already collected as part of the NLSY97, little can be done to improve the reliability or implementation of the survey. Questions for the survey, situational distractions, training, and standardizing protocols were all out of the control of this study. However, the threat of low statistical power was reduced. To reduce the threat of low statistical power, a sample size larger than required was used. The required sample size for this study is 207. A sample size of nearly 3,000 was used, since the data was easily obtainable and extracted.

Ethical Procedures

Institutional permission from Walden University's IRB was required for this study. IRB's approval was requested to access and analyze a data set that is already available to the public. From the United States Bureau of Labor Statistics online website,

public access is available to the NLYS97 survey data. The IRB approval number for this study is 01-29-21-0136898.

The NLSY97 is a longitudinal project that follows the lives of a sample of American youth born between 1980 and 1984. There was a total of 8,984 respondents in the first round of interviews. Participants ranged in ages from 12-17 in the first round of interviews. This ongoing cohort has been surveyed 18 times to date and is now interviewed biennially.

At each interview, respondents were questioned on a whole host of topics, including: education, training, achievement scores, employment, household logistics, geography, parental involvement, family processes, childhood experiences, marital status, pregnancy and fertility, income, assets, health, expectations, crime, and substance use. The first calendar year after the respondents turned 25, and then again, at age 30, they were asked a series of detailed asset questions, containing debt accumulation.

With the last wave of surveys (round 18) all respondents had turned at least 30 years of age and completed the detailed asset questions conducted at age 30. A total of 7,711 of the original 8,984 completed the age 30 asset questions.

All data for each cohort was available at no cost via an online search and extraction site that enables researchers to review NLYS97 variables and create data sets. No names, contact information, or identifying information was acquired. All data was anonymous. Data is secured on an encrypted and password protected laptop, which is kept in a locked desk drawer inside of a locked room when not in use by researcher. All data will be stored for a minimum of 5 years.

Summary

The purpose of the quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. Individual-level longitudinal data from the NLSY97 was used to examine more than seven thousand participants' responses regarding their student loan debt and home ownership status, mortgage status, and amount of mortgage debt. By exploring both home ownership and mortgage debt, I determined if student loans are deterring home ownership or leading young adults to purchase less expensive homes, thus less mortgage debt. For each outcome, ordinary least squares models were estimated and outcomes were regressed on respondent reported total educational debt and the set of control variables.

The next chapter focuses on the data collection and results of the study. This includes results on all three outcomes examined: whether the individual and/or his or her spouse owned a home at the age of 30; whether the individual and/or his or her spouse held a mortgage; and the amount of the mortgage debt owned by the individual and/or spouse.

Chapter 4: Results

The purpose of the quantitative study was to determine the relationship between student loan debt and home ownership for young adults who attended postsecondary institutions in the United States. A thorough literature review produced minimal existing research on this topic with mixed conclusions. To provide additional clarity on this underresearched area of finance that is of growing concern to the United States, I looked at the following research questions and hypotheses:

RQ1: What is the relationship between home ownership and student loan debt for young adults?

$H_0$1: There is no relationship between student loan debt and home ownership.

$H_1$1: There is a relationship between student loan debt and home ownership.

RQ2: What is the relationship between mortgage amount and student loan debt for young adults?

$H_0$2: There is no relationship between student loan debt and mortgage amount.

$H_1$2: There is a relationship between student loan debt and mortgage amount.

In this chapter, I provide the results of the data analysis for the research questions above. Major sections in this chapter include data collection, study results, and a summary of the findings.

Data Collection

Individual-level longitudinal data were acquired from the NLSY97 cohort. The NLSY97 cohort is a longitudinal project that follows the lives of a sample of American youth born between 1980 and 1984. According to the United States Bureau of Labor

Statistics (2016), the NLSY97 cohort was comprised of two independent probability samples. The first was a cross-sectional sample, and the second was an oversample of Black and/or Hispanic or Latino respondents. The cohort was selected using these two samples to meet the survey design requirement of providing sufficient numbers of Black and/or Hispanic or Latino respondents for statistical analysis.

Two phases were used to select members for the NLSY97 cohort. In the first phase, a list of housing units for the cross-sectional sample and the oversample was derived from two independently selected, stratified multistage area probability samples. This ensured an accurate representation of different sections of the population defined by race, income, region, and other factors. In the second phase, subsamples of the eligible persons identified in the first phase were selected for interview.

There was a total of 8,984 respondents in the first round of interviews. Participants ranged in ages from 12 to 17 in the first round of interviews. This ongoing cohort has been surveyed 18 times to date and is now interviewed biennially. With the last wave of surveys (Round 18), all respondents had turned at least 30 years of age. At each interview, respondents were questioned on a host of topics, including education, training, achievement scores, employment, household logistics, geography, parental involvement, family processes, childhood experiences, marital status, pregnancy and fertility, income, assets, health, expectations, crime, and substance use. The first calendar year after the respondents turned 25, and then again at age 30, they were asked a series of detailed asset questions containing debt accumulation.

Data on all 8,894 participants were extracted for analysis. To clean the data, any respondents who did not answer the questions regarding homeownership status, educational debt, and mortgage amount at age 30 were excluded from the study. There was a total of 1,291 participants who did not answer if they owned a home, reducing the participant pool to 7,693. Of the 7,693 participants remaining, 109 did not provide information regarding their total educational debt. An additional 60 participants did not provide mortgage debt information. After removing these respondents, 7,524 remained for analysis.

The focus of this study was on adults who attended postsecondary institutions and were thus able to accrue student loan debt. Any participants who did not attend at least some college were removed from the study. A total of 2,884 of the 7,524 participants attended a postsecondary institution. For all other variables with missing data, the missing data were replaced with the sample mean for continuous variables or zero for dichotomous and categorical variables. Missing data were considered minimal, except for family structure at age 12. Data missing for this variable was 78%. This seemed extremely high and was therefore excluded from the analysis.

A regression analysis was conducted on three homeownership related outcomes. The first was whether the individual and/or their spouse owned a home at the age of 30. The second was whether the individual and/or their spouse had a mortgage at the age of 30. The third was the amount of the mortgage debt owned by the individual and/or spouse. The independent variable was total self-reported student loan debt at the age of 30. This included debt from government, private institutions, friends, and/or family.

To reduce bias in the statistical analysis, I controlled for a range of sociodemographic characteristics likely to be associated with both homeownership and educational debt. Microsoft Excel only supports 16 variables (columns), so it was necessary to remove variables associated with parents' highest level of educational attainment as originally presented. Variables that the study controlled for included race (White and Black, with other as the reference category), urban locale, geographic location (northeast, south, and west, with north central as the reference category), respondent currently living with parent(s), marital status, employment status, parental status, respondent's highest degree obtained (high school degree, Associate degree, Bachelor degree, Master degree or higher, with no degree as the reference group), and household income.

Study Results

Descriptive statistics for the full sample of participants who attended at least some college is presented in Table 1. Table 1 also provides descriptive statistics for nonhomeowners versus homeowners.

Table 1

Descriptive Statistics

	Full sample	Nonhomeowner	Homeowner
Homeowner	40.29%	00.00%	100%
Mortgage holder	37.55%	00.00%	93.20%
Mortgage amount	$60,976	$0	$151,338
Total educational debt	$15,010	$16,030	$13,497
Employed	85.58%	84.03%	87.87%
White	60.37%	52.03%	72.72%
Black	21.57%	27.58%	12.65%
Other	18.07%	20.38%	14.63%
Parent(s) had HS degree or less	55.72%	58.71%	51.29%
Parent(s) had Associate degree	10.16%	09.99%	10.41%
Parent(s) had Bachelor degree	20.15%	18.58%	22.46%
Parent(s) had Master degree or higher	13.97%	12.72%	15.83%
Northeast region	15.60%	17.83%	12.31%
North central region	20.91%	16.43%	27.54%
South region	40.01%	39.90%	40.19%
West region	23.47%	25.84%	19.97%
Less than HS degree	00.21%	00.35%	00.00%
HS degree	11.86%	15.68%	06.20%
Associate degree	19.76%	21.43%	17.30%
Bachelor degree	45.21%	42.10%	49.83%
Master degree or higher	22.95%	20.44%	26.68%
Married	55.89%	42.39%	75.90%
Parent	65.12%	56.85%	77.37%
Urban	84.57%	88.79%	78.31%
Currently lives with parent(s)	11.20%	15.45%	04.91%
Gross Income	$107,632	$93,977	$127,867
Total Observations	2,884	1,722	1,162

Note. Mean or proportion presented.

Of the 2,884 participants, 1,162, or 40%, owned their own home, and 1,083, or 38%, held a mortgage. The average mortgage amount was $60,976 for the full sample

and $151,338 for only homeowners. The average educational debt for the full sample was $15,010. On average, nonhomeowners had $2,533 more educational debt than homeowners.

In addition to homeownership, mortgage amount, and educational debt, several other factors were observed, including employment status, race, parental education, geographic region, education, marital status, parental status, urban vs rural location, currently living with parents, and gross income. Some of the most notable differences between nonhomeowners and homeowners were race, marital status, and parental status. Of the full sample, 60% were White, 22% were Black, and 18% were classified as other. However, when divided into homeownership status, 73% of homeowners were White, compared to 52% of nonhomeowners. Thirteen percent of homeowners were Black, compared to 28% of nonhomeowners. Substantially more homeowner respondents were married and had children than nonhomeowners. Seventy-six percent of homeowners were married, and 77% had children, compared to 42% and 57% respectively of nonhomeowners.

The average gross income of the full sample was $107,632. Homeowners, on average, made $33,890 more than nonhomeowners. Homeowners also appeared to have more education than nonhomeowners. Seventy-six percent of homeowners had a Bachelor's degree or higher, compared to 62% of nonhomeowners. Also notable was that more nonhomeowners (89%) lived in urban areas than homeowners (78%). These differences were controlled for in the regression analyses.

A regression analysis was conducted on three homeownership related outcomes. The first was whether the individual and/or their spouse owned a home at the age of 30. The second was whether the individual and/or their spouse had a mortgage at the age of 30. The third was the amount of the mortgage debt owned by the individual and/or spouse. Two of the three homeownership related outcomes were binary. Binary outcomes impose heteroscedasticity, which constitute a violation of one of the OLS assumptions. Even though the OLS assumption is violated, "in the presence of binary outcomes, linear regression analysis is the most powerful, flexible, and the simplest strategy. This is the case for models with and without covariates, and in the presence of adjustments such as interactions or fixed effects" (Gomila, 2020, p. 20). Angrist and Pischke (2009) stated that homoscedasticity is generally violated in the real world, even in the case of nonbinary outcomes. In order to resolve this common issue (Angrist & Pischke, 2009), researchers have increasingly used heteroscedasticity-robust standard errors, which are valid even in the context of arbitrary heteroscedasticity (Woolridge, 2002, p. 56). Average causal effects and *p* values for binary outcomes are considered unbiased and consistent with logistic regression (Gomila, 2020; Hellevik, 2009).

Research Question 1

RQ1: What is the relationship between home ownership and student loan debt for young adults?

$H_0$1: There is no relationship between student loan debt and home ownership.

$H_1$1: There is a relationship between student loan debt and home ownership.

A multiple linear regression was calculated to determine the relationship between home ownership and student loan debt for young adults. The dependent variable was whether the individual and/or his or her spouse owned a home at the age of 30. The independent variable was respondent reported total educational debt. Covariates included: employment status, race, geographic region, education, marital status, parental status, urban vs rural location, currently living with parents, and gross income. Results can be seen in Table 2, 3, and 4.

Table 2

Regression Output-Homeownership

Regression statistics	
Multiple *R*	0.440374285
R square	0.193929511
Adjusted *R* square	0.189431036
Standard error	0.441666718
Observations	2884

Table 3

ANOVA-Homeownership

	df	*SS*	*MS*	*F*	Significance *F*
Regression	16	134.5513072	8.409457	43.110056	1.618E-121
Residual	2867	559.2642268	0.195069		
Total	2883	693.815534			

Table 4

Individual-Level Results-Homeownership

	Coefficients	Standard Error	*t* Stat	*P*-value	Lower 95%	Upper 95%
Intercept	-0.059259	0.1865	-0.3178	0.7507	-0.4249	0.3064
Employed	0.058338	0.0239	2.4433	0.0146	0.0115	0.1052
White	0.059738	0.0233	2.5666	0.0103	0.0141	0.1054
Black	-0.081819	0.0279	-2.9368	0.0033	-0.1364	-0.0272
South region	-0.049394	0.0228	-2.1620	0.0307	-0.0942	-0.0046
West region	-0.130864	0.0258	-5.0714	0.0000	-0.1815	-0.0803
Northeast region	-0.158143	0.0279	-5.6725	0.0000	-0.2128	-0.1035
Gross Family Income	0.000001	0.0000	5.2347	0.0000	0.0000	0.0000
HS degree	0.207287	0.1822	1.1377	0.2553	-0.1500	0.5645
Associate degree	0.319104	0.1817	1.7559	0.0792	-0.0372	0.6754
Bachelor degree	0.384327	0.1814	2.1188	0.0342	0.0287	0.7400
Master degree or higher	0.394380	0.1821	2.1657	0.0304	0.0373	0.7515
Married	0.177896	0.0198	8.9809	0.0000	0.1391	0.2167
Parent	0.125543	0.0196	6.4076	0.0000	0.0871	0.1640
Urban	-0.103552	0.0237	-4.3634	0.0000	-0.1501	-0.0570
Currently lives with parent(s)	-0.119065	0.0271	-4.3899	0.0000	-0.1722	-0.0659
Total Educational Debt	-0.000001	0.0000	-4.1202	0.0000	0.0000	0.0000

The multiple regression model is as follows:

$\hat{Y}$= -0.0593+0.0583(employed)+0.0597(White)-0.0818(Black)-0.0494(south region)-0.1309(west region)-0.1581(northeast region)+0.000001(gross

income)+0.2073(HS degree)+0.3191(Associate degree)+0.3843(Bachelor degree)+0.3944(Master degree or higher)+0.1779(married)+0.1255(parent)-0.1036(urban)-0.1191(currently living with parent(s))-.000001(total educational debt)

The analysis suggested that having higher educational debt was associated with a lower likelihood of owning a home. The model was significant ($F=43.1$, $p<.000$), with an R^2 of approximately .194. Essentially, if the ten predictors are known, the homeownership status can be presumed better than by chance alone. Overall, 19.4% of the variability was explained by the predictors. The null hypothesis was rejected.

Though significant, the association of educational debt with homeownership was relatively small in magnitude. Experiencing $10,000 more of educational debt was associated with a 1% lower likelihood of owning a home.

For the most part, the covariates functioned in expected directions. Living in an urban area, being Black, and currently living with parent(s) were all inversely associated with homeownership. In contrast, family income, being married, having children, and employment were all positively associated with homeownership. Obtaining a high school degree or Associate's degree was not found to be significant. All other covariates had significant results.

Research Question 2

RQ2: What is the relationship between mortgage amount and student loan debt for young adults?

$H_0$2: There is no relationship between student loan debt and mortgage amount.

$H_1$2: There is a relationship between student loan debt and mortgage amount.

First, a multiple linear regression was calculated to determine the relationship between having a mortgage and student loan debt for young adults. The dependent variable was whether the individual and/or his or her spouse had a mortgage at the age of 30. The independent variable was respondent reported total educational debt. Covariates included: employment status, race, geographic region, education, marital status, parental status, urban vs rural location, currently living with parents, and gross income. Results can be seen in Tables 5, 6, and 7.

Table 5

Regression Output--Mortgage

Regression statistics	
Multiple *R*	0.451988
R square	0.204293
Adjusted *R* square	0.199853
Standard error	0.433247
Observations	2884

Table 6

ANOVA--Mortgage

	df	*SS*	*MS*	*F*	Significance *F*
Regression	16	138.1661	8.63538	46.00546	2.0427E-129
Residual	2867	538.1456	0.187703		
Total	2883	676.3117			

Table 7

Individual-Level Results--Mortgage

	Coefficients	Standard error	*t* stat	*P*-value	Lower 95%	Upper 95%
Intercept	-0.086864	0.1829	-0.4748	0.6349	-0.4456	0.2718
Employed	0.077743	0.0234	3.3193	0.0009	0.0318	0.1237
White	0.056922	0.0228	2.4932	0.0127	0.0122	0.1017
Black	-0.093252	0.0273	-3.4122	0.0007	-0.1468	-0.0397
South region	-0.053854	0.0224	-2.4030	0.0163	-0.0978	-0.0099
West region	-0.136268	0.0253	-5.3835	0.0000	-0.1859	-0.0866
Northeast region	-0.148145	0.0273	-5.4172	0.0000	-0.2018	-0.0945
Gross Family Income	0.000001	0.0000	5.2190	0.0000	0.0000	0.0000
HS degree	0.169544	0.1787	0.9486	0.3429	-0.1809	0.5200
Associate degree	0.278984	0.1783	1.5650	0.1177	-0.0706	0.6285
Bachelor degree	0.355564	0.1779	1.9983	0.0458	0.0067	0.7045
Master degree or higher	0.383642	0.1786	2.1476	0.0318	0.0334	0.7339
Married	0.172296	0.0194	8.8672	0.0000	0.1342	0.2104
Parent	0.138748	0.0192	7.2191	0.0000	0.1011	0.1764
Urban	-0.088236	0.0233	-3.7902	0.0002	-0.1339	-0.0426
Currently lives with parent(s)	-0.110596	0.0266	-4.1569	0.0000	-0.1628	-0.0584
Total Educational Debt	-0.000001	0.0000	-4.4267	0.0000	0.0000	0.0000

The multiple regression model is as follows:

$\hat{Y}$= -0.0869+0.0777(employed)+0.0569(White)-0.0933(Black)-0.0539(south region)-0.1363(west region)-0.1481(northeast region)+0.000001(gross income)+0.1695(HS degree)+0.2790(Associate degree)+0.3556(Bachelor

degree)+0.3836(Master degree or higher)+0.1723(married)+0.1387(parent)-0.0882(urban)-0.1106(currently living with parent(s))-.000001(total educational debt)

The analysis suggested that having higher educational debt was associated with a lower likelihood of having a mortgage. The model was significant ($F=46.0$, $p<.000$), with an R^2 of approximately .204. Essentially, if the ten predictors are known, the mortgage status can be presumed better than by chance alone. Overall, 20.4% of the variability was explained by the predictors.

Though significant, the association of educational debt with having a mortgage was relatively small in magnitude. Experiencing $10,000 more of educational debt was associated with a 1% lower likelihood of owning a home.

For the most part, the covariates function in expected directions and similar to homeownership status. Living in an urban area, being Black, and currently living with parent(s) were all inversely associated with holding a mortgage. In contrast, family income, being married, having children, and employment were all positively associated with holding a mortgage. Obtaining a high school degree or Associate's degree was not found to be significant. All other covariates had significant results.

Second, a multiple linear regression was calculated to determine the relationship between mortgage amount and student loan debt for young adults. The dependent variable was the amount of mortgage debt owned by the individual and/or spouse at the age of 30. The independent variable was respondent reported total educational debt. Covariates included: employment status, race, geographic region, education, marital

status, parental status, urban vs rural location, currently living with parents, and gross income. Results can be seen in Table 8, 9, and 10.

Table 8

Regression Output--Mortgage Amount

Regression statistics	
Multiple *R*	0.456891
R square	0.20875
Adjusted *R* square	0.204334
Standard Error	83411.82
Observations	2884

Table 9

ANOVA--Mortgage Amount

	df	*SS*	*MS*	*F*	Significance *F*
Regression	16	5.2625E+12	3.289E+11	47.27366	7.575E-133
Residual	2867	1.9947E+13	6.958E+09		
Total	2883	2.521E+13			

Table 10

Individual-Level Results--Mortgage Amount

	Coefficients	Standard Error	*t* stat	*p* value	Lower 95%	Upper 95%
Intercept	-46691.188	35219.2255	-1.3257	0.1850	-115748.755	22366.3800
Employed	7753.8978	4509.1973	1.7196	0.0856	-1087.6992	16595.4949
White	8656.1309	4395.6314	1.9693	0.0490	37.2131	17275.0488
Black	-15589.266	5261.5534	-2.9629	0.0031	-25906.0762	-5272.4551
South region	-1135.3752	4314.6996	-0.2631	0.7925	-9595.6026	7324.8521
West region	3571.2838	4873.3271	0.7328	0.4637	-5984.2958	13126.8634
Northeast region	-9170.6629	5265.0999	-1.7418	0.0817	-19494.4276	1153.1016
Gross family income	0.2185	0.0186	11.7587	0.0000	0.1821	0.2550
HS degree	23746.1506	34409.8804	0.6901	0.4902	-43724.4596	91216.7608
Associate degree	33531.2988	34320.7047	0.9770	0.3287	-33764.4564	100827.0541
Bachelor degree	53726.4209	34257.1156	1.5683	0.1169	-13444.6493	120897.4912
Master degree or higher	66034.1828	34392.0528	1.9200	0.0550	-1401.4710	133469.8368
Married	28957.4030	3740.9186	7.7407	0.0000	21622.2406	36292.5655
Parent	26261.2062	3700.2705	7.0971	0.0000	19005.7464	33516.6662
Urban	538.9037	4481.9766	0.1202	0.9043	-8249.3190	9327.1266
Currently lives with parent(s)	-16476.438	5122.2417	-3.2166	0.0013	-26520.0874	-6432.7887
Total educational debt	-0.2732	0.0571	-4.7868	0.0000	-0.3851	-0.1613

The multiple regression model is as follows:

$\hat{Y}$= -46691.19+7753.90(employed)+8656.13(White)-15589.27(Black)-1135.38(south region)+3571.28(west region)-9170.66(northeast region)+0.2186(gross

income)+23746.15(HS degree)+33531.30(Associate degree)+53726.42(Bachelor degree)+66034.18(Master degree or higher)+28957.40(married)+26261.21(parent)+538.90(urban)-16476.44(currently living with parent(s))-.2732(total educational debt)

The analysis suggested that having higher educational debt was associated with a lower mortgage amount. The model was significant ($F=47.3$, $p<.000$), with an R^2 of approximately .209. Essentially, if the ten predictors are known, the mortgage amount can be presumed better than by chance alone. Overall, 20.9% of the variability was explained by the predictors. The null hypothesis was rejected.

A significant and somewhat larger association was found with educational debt and mortgage amount. Each additional $1,000 of educational debt was associated with $273.22 less in mortgage debt.

Race, gross family income, being married, having children, and currently living with parent(s) were the only covariates with significant results. Of these, being Black and currently living with parents were inversely associated with mortgage amount. Gross family income, being White, being married, and having children were positively associated with mortgage amount. Employment, geographic region, level of education, and urban vs rural location were not found to be significant.

Summary

The purpose of this quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. Individual-level longitudinal data from the NLSY97 was used to examine the responses of almost

three thousand participants, who had attended at least some level of postsecondary schooling. Responses regarding their student loan debt and home ownership status, mortgage status, and amount of mortgage debt was analyzed. For each outcome, ordinary least squares models were estimated and outcomes were regressed on respondent reported total educational debt and the set of control variables determined to be associated with both homeownership and educational debt.

Results indicated that homeownership and mortgage status, though significant, had a relatively small association with educational debt. A significant and somewhat larger association was found with educational debt and mortgage amount. Each null hypothesis was rejected.

The next chapter focuses on a discussion of the results, conclusions, and recommendations. Sections include an interpretation of the findings, limitations of the study, recommendations, implications, and conclusions.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to determine the relationship between student loan debt and home ownership for young adults in the United States. Research has shown that student loan debt has increased over the last several years, while first-time home purchases have decreased. However, there has been very little research to determine if higher student loan debt is a major cause of lower first-time home buyers. This study adds to the limited research available on this topic by examining the relationship between student loan debt and home ownership.

Using data from the NLSY97 survey, multiple linear regression was used to analyze the relationship between student loan debt and three outcomes, including homeownership status, mortgage status, and mortgage amount. A set of variables associated with student loan debt and homeownership were also controlled for to improve internal validity.

The models for all three outcomes were considered significant, with R^2 values of .194 for homeownership, .204 for mortgage status, and .209 for mortgage amount. Essentially, if the 10 predictors are known, homeownership status, mortgage status, and mortgage amount can be presumed better than by chance alone. Though significant, the association of educational debt with homeownership and mortgage status was relatively small in magnitude. Experiencing $10,000 more of educational debt was associated with a 1% lower likelihood of owning a home and having a mortgage. A significant and somewhat larger association was found with educational debt and mortgage amount. Each additional $1,000 of educational debt was associated with $273.22 less in mortgage

debt. Major sections in this chapter include interpretation of findings, limitations of the study, recommendations, implications, and conclusions.

Interpretation of Findings

The theory that student loan debt is negatively affecting home buying among young adults is largely based on the correlation of two historical trends: the rise of student loans and the decrease of first-time home buyers. However, very little research has been conducted to examine the link between student loan debt and purchasing a home. Of the research that has been completed, the results are not conclusive.

A thorough literature review only produced two studies that addressed student loan debt and homeownership for individuals who had attended at least some college. Other researchers examined differences among students with and without student loan debt in samples that included students who had never attended college and were thus never able to accrue student loan debt. Cooper and Wang (2014) and Houle and Berger (2015) limited their research to individuals who attended at least some postsecondary schooling, thus enabling an “apple to apple” comparison. Cooper and Wang concluded that student loan debt lowers the likelihood of young adults purchasing a house or at least delays homeowners whereas Houle and Berger determined that student loan debt had a very small impact on homeownership. The findings of this study were closely related to that of Houle and Berger.

Cooper and Wang (2014) used data from the 1988 National Educational Longitudinal Survey to examine the relationship between student loan debt and future homeownership. They used a linear probability model to analyze the relationship between

homeownership and student debt. They controlled for a host of variables, very similar to the variables controlled for in this study, including geography, education level, race, gender, income, degree obtained, and years since participants finished or left school. Cooper and Wang's results indicated that individuals with student loan debt are 12 percentage points less likely to own a home than those without student loan debt. They concluded that 12 percentage points was meaningful economically because the homeownership rate for their sample was approximately 35% (Cooper & Wang, 2014).

Houle and Berger (2015) used data from the NLSY97 to examine the relationship between student loan debt and homeownership, mortgage acquisition, and mortgage amount. At the time of their study, respondents of the survey were between the ages of 26 and 30. The NLSY97 surveys young adults at the age of 25 and then again at the age of 30 regarding debts, assets, and homeownership. At the time of Houle and Berger's study, the majority of respondents had not turned 30 years of age, thus not completing the second part of the survey. Now, all participants are over the age of 30 and have completed both parts of the survey, giving a much larger sample size. Houle and Berger (2015) concluded a very small, statistically weak, association between actual educational debt and both owning a home and having a mortgage. They also found a somewhat larger and significant association with mortgage amount (Houle & Berger, 2015).

The findings of Houle and Berger (2015) are consistent with the findings of this study. The models for Houle and Berger's research for all three outcomes were considered significant, with R^2 values of .229 for homeownership, .226 for mortgage status, and .151 for mortgage amount. The models for all three outcomes of this study

were also considered significant, with R^2 values of .194 for homeownership, .204 for mortgage status, and .209 for mortgage amount.

The individual-level OLS findings of Houle and Berger (2015) were also consistent with the findings of this study. Both Houle and Berger and I found inverse associations between student loan debt and homeownership, mortgage acquisition, and mortgage amount. Both studies revealed a significant but relatively small association between educational debt with homeownership and mortgage status. Experiencing $10,000 more of educational debt was associated with a 1% lower likelihood of owning a home and having a mortgage in both studies.

A significant and somewhat larger association was found with educational debt and mortgage amount in both Houle and Berger's (2015) and my study. Houle and Berger concluded that each $1,000 of educational debt was associated with $146 less mortgage debt. I found an even greater association, concluding each additional $1,000 of educational debt was associated with $273.22 less in mortgage debt. This is a difference of $127.22 per $1,000 of educational debt.

The findings of this study are consistent with the theoretical framework of motivation-need theory based on Maslow's hierarchy of needs. When consumer behavior is viewed through the lens of the hierarchy of needs, it becomes clear why a person may choose to forgo the purchase of a home and focus on financial security. An individual who has accumulated a large amount of student debt may become more concerned for financial security, a lower need, than the social status that comes with owning one's own

home. Renting or living with a relative may be very appealing when one is struggling to gain financial security.

Limitations

One major limitation of this study was the use of self-reported data. The majority of data available from the NLSY 97 survey was self-reported, and official documentation corroborating the answers was not required. The three variables of greatest concern are gross income, total educational debt, and mortgage amount. Questions regarding these three variables may have been cognitively difficult or may have felt intrusive to respondents. To reduce the proportion of missing ("don't know" or "refused") data, respondents who did not provide exact dollar answers to questions were asked follow-up questions to elicit approximate information (United States of Labor Statistics, 2016).

A second limitation of this study was possible cofounders not accounted for. Even though a whole host of factors were considered and controlled for, there is the possibility that others exist that relate to homeownership and educational debt. For instance, other types of debt, such as credit card debt or automobile debt, may also influence homeownership and the ability of young adults to be approved for loans. Financial literacy and financial planning skills are also factors that may affect young adults and their ability to purchase a home.

Another key limitation of this study was measuring homeownership and student loan debt at only one point in time. This essentially ignores homeownership prior to the age of 30. It is possible that young adults purchased and exited homeownership prior to

the age of 30. This would be of particular importance if the excess of educational debt influenced the decision to exit homeownership.

Recommendations

Though the results of this study revealed a significant association between educational debt and homeownership, the magnitude was relatively small. Experiencing $10,000 more of educational debt was only associated with a 1% lower likelihood of owning a home. This small association does not support the empirical claim of educational debt being a major factor in the decline of first-time home buyers. Coupling this with the fact that the downward trend in home buying predates the rise in student loan debt, it is recommended that future researchers explore other factors that may be major contributors to the decrease in first-time home buyers. The research of Furstenburg (2015) and Houle (2014) suggested that one possible alternative for the downward trend in home buying could be due to the structural shifts in the transition to adulthood.

In the current study, I controlled for a variety of variables that were associated with both student loan debt and homeownership. These included employment status, race, parental education, geographic region, education, marital status, parental status, urban vs rural location, currently living with parents, and gross income. In addition to these variables, others still exist that relate to homeownership and educational debt. I recommend that future iterations of this study include additional cofounders that may bias the results, including financial literacy, financial planning skills, credit card debt, automobile debt, and years since leaving or finishing school.

It is recommended that future studies examine the impact race has on educational debt and homeownership. The descriptive statistics of this study indicated that there may be an unequitable amount of homeowners that are Black when compared to the entire population. Of the full sample, 22% were Black. However, only 13% of homeowners were Black, compared to 28% of non-homeowners. Future research is warranted to analyze this variance.

This study examined the relationship of educational debt and homeownership for young adults at age 30, one point in time. This essentially ignores homeownership prior to or after the age of 30. Young adult, as defined in this research, includes individuals ranging in age from 18 to 35 (Petry, 2002). The respondents of the NLSY97 survey were asked a series of detailed asset questions, containing debt accumulations, when they turned 25 and then again at age 30. They will also be asked these same questions when they turn 35. Future research could include an analysis of educational debt and homeownership over these three periods of time.

The literature review highlighted delinquency of educational loans as a growing concern. Though many students start college and accumulate debt, not all of them leave with a college degree. “Thirty-seven percent of adults with college student loans outstanding, not enrolled, and less than an associate degree are behind. This compares to 21 percent of borrowers with an associate degree. The delinquency rate is even lower among borrowers with a bachelor’s degree (10 percent) or graduate degree (6 percent).” (Board of Governors of the Federal Reserve System, 2020, para. 6) Delinquency on educational loans could be a major factor for credit scores, thus a major factor for

securing a home loan. Additional research on the delinquency of educational loans and the association with homeownership is recommended to explore this growing concern.

Implications

Only a small amount of research had been directed towards the decrease in first-time home buyers and the potential impact of increasing student loan debt prior to this study. Of that research, results had been mixed. The findings of this study closely imitate the findings of Houle and Berger (2015) which used 2011 data from the NLSY97 cohort. Both studies found inverse associations between student loan debt and homeownership, mortgage acquisition, and mortgage amount. Both studies found a significant, but relatively small association between educational debt with homeownership and mortgage status. However, a significant and somewhat larger association was found with educational debt and mortgage amount in both studies. Houle and Berger (2015) concluded that each $1000 of educational debt was associated with $146 less in mortgage debt. The findings of this study found an even greater association, concluding each additional $1,000 of educational debt was associated with $273.22 less in mortgage debt.

Finding an even stronger inverse association between educational debt and mortgage amount may imply that increasing educational debt results in individuals purchasing less expensive homes. Having a better understanding of these implications can result in positive social change. Multiple business sectors, the government, and individual consumers can use this information to their benefit.

Business professionals in the housing industry, including but not limited to real estate agents, bankers, and contractors, can better meet the needs of first-time

homebuyers with this information. Type, size, location, and age all affect the price of a home. Contractors and home builders can focus their efforts on this particular niche to meet the needs of first-time homebuyers. Real estate agents can guide first-time homeowners to houses that better fit their needs. The banking industry can use this information to aid first-time homebuyers in the mortgage process.

The results of this study can also be used to develop financial planning tools to aid students with high levels of student loan debt. Planning tools could directly focus on how students can combat student loan debt to be in the best possible position to purchase their own home. In addition, colleges and other agencies could offer financial literacy as part of their curriculum to better inform students about educational debt and home mortgages.

Positive social change may also be brought about through policy change. The results of this study may inform policy makers of the particular issues brought upon by student loan debt. As a result, policies or programs could be put in place to aid those students with high student loan debt or to reduce the number of college students who leave college in debt.

Conclusions

Student loan debt affects 44.7 million people in the United States and totals $1.68 trillion (Bustamante, 2020). The impacts range from struggling to pay bills to reaching major lifetime milestones and achievements, including the purchase of a home (Mezza et al., 2016). The purpose of this quantitative study was to uncover what effects student debt

has on real estate, more specifically what effects student loan debt has on the ability of buyers to purchase a home for the first-time.

Individual-level longitudinal data from the NLSY97 was used to examine the responses of almost three thousand participants, who had attended at least some level of postsecondary schooling. Responses regarding their student loan debt and home ownership status, mortgage status, and amount of mortgage debt was analyzed.

Results indicated that homeownership and mortgage status, though significant, had a relatively small inverse association with educational debt. This small association does not support the empirical claim of educational debt being a major factor in the decline of first-time home buyers. However, the analysis between educational debt and mortgage amount showed a significant and somewhat larger inverse relationship, indicating that even though student debt may not be a major factor in deterring homeownership, it may lead young adults to purchase less expensive homes, thus less mortgage debt.

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