

The Associations between Student Debt and Precarious Employment on Millennial
Homeownership in the United States

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B.A., Wichita State University, 2016

Submitted to the graduate program in Sociology and the Graduate Faculty of the University of
Kansas in partial fulfillment of the requirements for the degree of Master of Arts.

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Date Defended: 2 June 2021

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Date Approved: 9 June 2021

Abstract

Millennials have shifted into adulthood amidst great economical barriers, which reduce rates of homeownership for this cohort. Trends suggest that Millennials spend much of their young adulthood pursuing education and developing careers for increased financial stability, as levels of student debt and instable employment may limit the resources necessary to purchase a home. This study aims specifically to investigate how possessing student debt and precarious employment may reduce the likelihood of home-buying among Millennials, individuals born between 1981 and 1996 (Colby and Ortman 2014; Dimock 2019). Data from the National Longitudinal Survey of Youth 1997 (NLSY97) from the year 2017 is analyzed and logistic regressions are conducted to test the hypothesis that Millennials who carry student debt and are precariously employed are less likely to own a home. Results indicate that possessing student debt does not have a significant reduction of Millennial homeownership, but measures of precarious employment do not conclusively predict the likelihood of homeownership. This study's findings suggest that the deterrents to Millennial homeownership are interconnected with the period effects of the Great Recession and various lifestyle factors.

Acknowledgements

Throughout the writing of this thesis, I am grateful for the support and assistance I have received. I would first like to thank my advisor, Dr. Jarron Saint Onge, for his valuable guidance, feedback, and encouragement for this project and for my career aspirations. His advice, from the very beginning of my time at the University of Kansas, helped formulate my research questions and further develop my skills. I would also like to thank my committee members, Dr. Tracey LaPierre and Dr. Hye-Sung Han, whose expertise and insightful feedback sharpened my focus and brought my work to a higher level. In addition, I would like to acknowledge my colleagues, Jennifer Babitzke, Laura Muneton, and Heeyoun Shin, for their warm friendship and wise counsel in this program. Finally, the completion of this thesis would not have been possible without the enduring support, patient encouragement, and deep love of my parents and dearest partner, Drew Perry.

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INTRODUCTION

Homeownership demonstrates inequalities in wealth accumulation, income, and labor market participation. Among the Millennial cohort, the process of purchasing a home is characterized by unique and increasingly challenging economic barriers. Past research has demonstrated that the probability of Millennial homeownership decreases with the presence of student debt burdens and inadequate employment, which limit Millennials' ability to accumulate savings (Houle and Warner 2017; McKee 2012). Millennial trends suggest that this cohort spends much of their young adulthood pursuing education and developing careers for increased financial stability, participates at high levels in the private rental market, and/or increasingly co-resides within the parental home, all of which have led to delays in typical young adulthood transitions to marriage and parenthood (Bleemer, Brown, Lee, and Van der Klaauw 2014; Mills, Rindfuss, McDonald, and Te Velde 2011). Yet, existing research fails to explain how specific financial barriers limit the transition to homeownership. Specifically, more research is required to understand the extent to which outstanding student loans and precarious employment may limit Millennial homeownership. To this end, I use nationally representative, secondary data to explore how the economic factors of student debt and precarious employment are associated with Millennial homeownership by researching three primary questions. First, is outstanding student debt associated with the likelihood of homebuying for Millennials in young adulthood? Second, is precarious employment associated with lower chances of homeownership among Millennials? And third, are Millennials who carry outstanding student debt and are employed precariously less likely to purchase a home than their peers who are unburdened by student debt and are stably employed?

Background

Previous research has linked economic measures to homeownership. For example, Houle and Berger (2015) found that the presence of student debt lessens the likelihood of Millennial homeownership but determined that the amount of student debt does not conclusively affect Millennial homeownership. The ability to pay for a down payment, closing costs, or maintenance expenses may be limited by the amount of student debt Millennials have left to pay. Precarious employment, non-standard, insecure, or low wage jobs, may also limit funds set aside for purchasing a home. Precarious employment is conceptualized in a variety of employment characteristics: temporary, seasonal, or part-time work; low control over the labor process; a lack of regulatory protection; low wages; and a lack of employee benefits like paid leave, retirement plans, or health insurance; (Cranford, Vosko and Zukewich 2003). Regardless of the definition, the insecurity and tenuousness of these jobs reduces the ability to fully support an individual or household.

The instability of precarious employment coupled with a growing reliance on these types of jobs may make Millennials less able to save or invest their money for the future, whereby their spending is focused on more immediate needs such as health care or emergency funds, which do not include housing. Since the 1990s, precarious jobs have been increasing, including service industry jobs, and even with a college degree, Millennials are challenged in finding work that sufficiently covers their living expenses (Cranford et al. 2003; Kalleburg 2009). Consequently, Millennials frequently attend college to find high-skilled and well-paying jobs, but many continue to find that these types of positions are increasingly scarce. The effect of economic obstacles of student debt and instable and insufficient wage work among Millennials is an

important problem because these issues affect the financial wellbeing and overall lifestyles of Millennials, in ways not experienced by previous social cohorts.

Life Course and Life Cycle Theories

Depending on cultural and economic factors, young adults approach spending and saving money with various perspectives and access to resources. Two theoretical frameworks will be used in this study to examine the period of young adulthood and consumer spending.

First, the life course perspective will be used to situate the importance of young adulthood in the Millennial context. The life course perspective is a multidisciplinary approach that examines individuals in the context of social connections, developmental trajectories, and historical and cultural change (Elder, Johnson, and Crosnoe 2003). Specifically, this study will consider the constraints of history and social conditions and the timing of occupations related to homeownership opportunities.

Second, the life cycle theory, developed by Modigliani and Brumberg (1954), will be used to frame of spending habits of Millennials in this study. This theory explains the relationships between income, savings, and consumption throughout the life course. According to the theory, young adults earn lower wages when they first begin working in the labor market, and their income and savings typically increase as they approach. Sometimes young adults' consumption levels exceed their earning levels with student loans, or consumer debt and some do not actively save for homeownership or retirement. Generally, as individuals age, savings increases as income rises (Deaton 2005). Life cycle theory has been applied to studies regarding homeownership, student loans and student debt, and health conditions (Artle and Varaiya 1978; Cho, Xu, and Kiss 2015; Davies 1995; Fisher and Anong 2012). Life cycle theory helps explain

the general financial situation Millennials face during young adulthood and their future monetary trajectory during the life course.

LITERATURE REVIEW

This review examines existing literature to understand the complex obstacles Millennials face in purchasing homes. These obstacles may be grouped according to more causal factors such as Millennial financial barriers, the effect of education, and various lifestyle factors.

The Millennial Cohort and General Trends in Millennial Housing

Trends in homeownership among Millennials—those born between 1981 and 1996—are unique for a variety of reasons (Colby and Ortman 2014; Dimock 2019). Namely, student debt and precarious employment have impacted Millennials in ways unexperienced by previous generations. Shifts in economic opportunity and instability caused by the 2008 recession, changing education patterns, and consumption patterns, and regional preferences all incited implications for Millennial homeownership.

Millennials have transitioned into adulthood amidst great changes to the economy through global recession, increases in education, and instability in the workforce. Millennials are often depicted as a highly educated, racially and ethnically diverse, and innovative cohort, but have been kept from achieving career and financial goals because of the 2008 global recession and neoliberal economic policies that have increased volatility in the labor market (Hoolachan and McKee 2019; Houle and Berger 2015; Hollister 2001; Kalleburg 2009). Millennials frequently experience challenges in purchasing homes due to high costs for secondary education, unstable employment, lifestyle choices, and geographic housing preferences. However, the

probability of homeownership among Millennials has been found to increase with higher levels of education, marriage, childbearing, and parental homeownership and assistance in purchasing a home (Andrews & Sánchez 2011; Cheung, Chan, and Monkkonen 2020; Choi, Zhu, Goodman, Ganesh, and Stochak 2018; Clark, Deurloo, and Dieleman 1994; Galster, Marcotte, Mandell, Wolman, and Augustine 2007; Gyourko and Linneman 1997; Helderma and Mudler 2007; Lauster and Fransson 2006; Lee, Myers, Painter, Thunell, and Zissimopoulos 2020; Mudler, Dewilde, van Duijn, and Smits 2015; Mudler and Smits 1999; Myers 2016; Smits and Mudler 2008; Yu 2020).

Policies and economic challenges have obstructed homeownership amongst Millennials, and many young adults revert to renting in the private market. Indeed, this high rate of renting has led McKee (2012) to refer to Millennials as “Generation Rent.” Studies have found that Millennials choose to rent for several reasons. First, the cost of housing has increased exponentially since the 2008 recession and housing market crash. In fact, 42 percent of average Millennial expenditures paid for housing costs across the United States in 2016 (Kurz, Li, and Vine 2018). Since the 2008 housing crisis, the United States’ housing market has experienced drastic changes. The supply of affordable housing, in rental and home owning markets, is vastly limited, so Millennials forming households are overburdened by housing costs (Choi et al. 2018). Also, many renters entered the housing market after the foreclosure of their homes from 2007 to 2009, increasing the demand of rental units and monthly rental costs in regional markets. Second, Millennials have prioritized educational attainment and typically spend their young adulthood in post-secondary educational institutions, often delaying marriage and parenthood (Mills et al. 2011). Third, geographic preferences may account for the choice to rent among Millennials as well. Highly educated Millennials tend to move to large cities for job prospects,

entertainment, and other lifestyle preferences; however, large cities' housing markets are often low in supply and available units are extremely costly (Choi et al. 2018).

Student Debt

As middle- and low-skilled jobs have decreased since the end of the twentieth century, a four-year college education is nearly essential to achieve middle-class status and possess a higher-wage job (Hollister 2011; Kalleburg 2009). Consequently, university enrollment has increased exponentially, but year-by-year increases to college tuition make it nearly impossible for young adults to graduate debt-free (Bleemer et al. 2014). The cost of education rises independently of inflation, and many young adults find it challenging to attend college without borrowing money. In fact, the national amount of outstanding student debt tripled from \$435 billion in 2006 to \$1.31 trillion in 2016, and the only type of debt that increased during the Great Recession was student debt (Houle and Berger 2015; Lee, Kim and Hong 2018; Kelchen and Li 2017).

Student debt can impede homebuying in two ways: banks may reduce mortgage loan amounts when young adults apply for a mortgage, or new homeowners may temporarily suspend mortgage payments until student debts are lower (Shand 2008). These factors make the process of saving money incredibly difficult for Millennials transitioning into adulthood, so many delay homeownership and family formation until they stabilize their finances (Choi et al. 2018; Lennartz, Arundel and Ronald 2016). To do so, some Millennials live with non-family roommates or return to their parents' homes. Individuals who have failed to graduate from college are most likely to cohabit with parents, and Millennials living with roommates or parents

tend to experience insecure employment conditions like stagnant wages, unemployment, and underemployment (Bleemer et al. 2014; Dickerson 2016; Houle and Warner 2017).

Studies have consistently found that the higher amounts of student debt among young adults decrease the likelihood of college graduation and achieving future financial goals such as home buying. For example, students who carry more than \$10,000 in student loans are less likely to graduate with a college degree, which may eventually lower the likelihood of obtaining a mortgage and decrease credit scores, because non-graduates tend to earn lower wages than graduates (Baker, Andrews, and McDaniel 2017; Cooper and Wang 2014).

Among studies linking student debt to Millennial homeownership, three common trends have been uncovered. First, homeownership is more common among Millennials without student debt in early adulthood or in their early 20s. Lee et al. (2018) found that homeownership is more common in young adults who do not carry student debt—either because they did not take out student loans or they did not attend a post-secondary educational institution—compared to young adults with post-secondary education and student debt. Second, Millennials possessing student debt are more likely to purchase homes later in adulthood, during their late 20s to late 30s (Cooper and Wang 2014). This trend may be explained by expected higher future incomes for students that took out increased amounts student loans for higher levels of education, expecting to receive a higher return on their investment of human capital through advanced degrees (Lee et al. 2018; Mezza, Ringo, Sherlund, and Sommer 2020). Lastly, higher amounts of student debt negatively affect Millennial homeownership. Among Millennials who attended a 4-year university and took out federal student loans between 1999-2014, an increase of \$1,000 borrowed in student loans led to a 1 to 2 percentage point decrease in the probability of purchasing a home during the mid-20s (Mezza et al., 2020). Types of loans also matter. Robb,

Schreiber, and Heckman (2020) found that Millennial college graduates were less likely to buy a home four years after graduating if they took out any loans, but that graduates who took out private loans were 5 percentage points less likely to become homeowners per \$1,000 dollars borrowed in private loans. Regardless of student debt, researchers have found that high incomes are positively related to the likelihood of buying a home following college attendance (Lee et al. 2018; Robb et al. 2020).

Precarious Employment

The labor market changes from the late 20th century have increased precarious work and created limits on job stability for many adults, including Millennials that entered the workforce in the 2000s and 2010s. The lack of job security influenced by flexible employment and the gig economy reduce the accessibility to homeownership for many, especially Millennials who have been further hampered by student debt, as well as poor housing markets and economic conditions influenced by the 2008 recession.

Incomes and earnings, of course, are linked to jobs, which have become increasingly precarious since the late twentieth century (Hollister 2011; Kalleburg 2009). For Millennials entering the workforce, full-time jobs in chosen fields are extremely difficult to obtain. Since the 1970s and 1980s, the global economy has decreased the number of full-time middle-skilled professions, low-skilled manufacturing positions, and retail sales jobs that stably employed previous cohorts during young adulthood (Arundel and Doling 2017; Dickerson 2016; Kalleberg 2009). According to Green (2017), young adults' jobs have decreased in occupational status since the early 1990s, demonstrating how Millennials are overqualified for current jobs and infrequently utilize their educational training and skills; between 1992-2015, young adults in

low-skilled positions grew by 11% despite overall rising levels of educational attainment. Additionally, since the Great Recession, wages have stagnated except in science, technology, engineering, and mathematics (STEM) and healthcare positions, and employees no longer experience pay increases with job tenure (Dickerson 2016; Houle 2014; Kurz et al. 2018). Even in high-wage jobs, companies often cut costs by employing workers flexibly with non-permanent contracts (Akdogan, Karacimen, and Yavuz 2019; Hollister 2011; Olsthoorn 2014).

An increasing number of jobs are categorized as non-standard work, which is characterized by deviation from the traditional work model of full-time and permanent employment by a single employer (Cranford et al. 2003). Non-standard work can involve self-employment, part-time or temporary employment, and the potential of working multiple jobs. However, precarious work differs from non-standard work in four ways, which distinguish the levels of job security within these two types of employment. The four factors of precarious work involve degree of uncertainty of continuing employment, degree of control over the labor process, degree of regulation protection, and income level (Cranford et al. 2003). Overall, precarious workers tend to lack control over their work, and their well-being and interests are unprotected from the government and their employers.

Many of today's precarious jobs are located within the gig economy. In the gig economy, independent workers obtain "gigs" or one-time jobs from specific websites or smartphone applications, and worker performance is rated by the client, which contributes to the worker's overall rating and impacts their future earning potential (Thompson 2018). In the United States, jobs in the gig economy have increased since the 1990s. As of 2017, 57.3 million people, or 36% of the United States' workforce, identified as freelance workers, and 47% of freelancers are from the Millennial cohort (Poon 2019), potentially reducing opportunities to save for the future.

As Millennials have entered the labor market, they have been employed using contractual agreements, without fixed working locations, fixed hours, and security expectations (Shearmur 2018). Millennials may find the perks of gig or non-standard work appealing and aligned to their workplace values of work-life balance, flexible hours, vacation and personal time, and the “appreciation of their needs as a person” (Poon 2019). Although jobs such as these boast benefits that appeal to younger Millennial workers, precarious employment and jobs within the gig economy increases instability among its workers. Without employment benefits, workers must independently bear the costs of health insurance, retirement plans, sick day salaries, and labor costs for their jobs, and are often encouraged to work below market value or without pay (Poon 2019; Thompson 2018). The autonomy involved in precarious work may influence Millennials to stop working formal or traditional jobs, but as previously stated, flexible or freelance work reduces workers’ financial freedom and stability and may limit their ability to get established in the more formal economic sector.

Flexible employment reduces the ability to invest in homeownership as the process involves long-term risks. Akdogan et al. (2019) found that workers who are involuntarily employed part-time and workers with a low average job tenure are unlikely to obtain housing credit. Low wages, high probability for layoffs, inconsistent work schedules, and reduced opportunity for salary raises involved in precarious work reduce the ability of these workers to pursue homeownership. In fact, Millennials with low levels of earned income and high levels of job insecurity are less likely to hold a mortgage, compared to their stably employed peers who earn high incomes (Dotti Sani and Acciai 2018). Precarious employment establishes a huge financial barrier to homeownership for Millennials and may hinder family formation, future economic wellbeing, and overall quality of life (Arundel and Doling 2017).

Family Background and Support

Studies find consistent associations between family background and support and the likelihood of homeownership for their adult children. Family support can take the form of direct financial transfers or indirect methods of assisting homeownership among young adults. Homeowning parents frequently help their adult children to purchase a home by providing financial assistance through a variety of methods including regular financial transfers to help children save money for a down payment, informal home loans, inheritance payments, co-signing the mortgage agreement, allowing adult children to live cheaply in the parental home, or socializing children with money management skills and to value owning property (Bayrakdar, Coulter, Lersch, and Vidal 2018; Druta and Ronald 2017; Galster et al. 2007; Grinstein-Weiss, Spader, Yeo, Taylor, and Freeze 2011; Mudler and Smits 1999; Smits and Mudler 2008). support can take the forms of financial transfers and loans, some coming from parental savings, retirement settlements, and grandparental inheritance, while indirect support can involve co-residence in the parental home for little to no cost or assistance with decorating the home (Druta and Ronald 2017). Direct financial transfers, however, reduce the amount of time young adults must save for a home and enable young adults to buy a home earlier in their life cycle, accumulating equity in their home for a longer period of time (Druta and Ronald 2017; Lee et al. 2020). Yet, direct support is disproportionately linked to income distribution.

Unsurprisingly, parents in the highest quartile of income distributions are most likely to help their children achieve homeownership. High-income parents possess high levels of education and most likely have accumulated wealth through their own homeownership or other investments (Lee et al. 2020; Mudler and Smits 1999; Mudler et al. 2015). Regardless of parents' income levels, financial transfers increased the probability of children's homeownership Family

assistance is often dependent on the affordability of the housing market. In areas where housing costs were high, relative to GDP per capita, young adults relied more on their parents' support in purchasing a home because they lacked sufficient resources to buy on their own and (Mudler et al. 2015). Additionally, parents and their homeownership children are more likely to live close to one another because they tend to operate within the same housing market (Helderman and Mudler 2007; Mudler et al. 2015).

Parents also benefit their children by owning their family home. Homeownership is more likely for young adults if parents owned a home during childhood, as owning parents may socialize children to value homeownership and use equity from their homes to provide financial assistance to their children pursuing homeownership (Galster et al. 2007; Mudler and Smits 1999). Parental homeownership also increases their child's likelihood of graduating high school and college, indicating that owner-occupied housing provides stability and increased social capital from relationships within the neighborhood (Galster et al. 2007).

Family assistance for homeownership is less likely among families of color. Among adult children aged 25-44, those with non-Hispanic white parents are more than three times as likely to receive financial assistance from their parents than adult children whose parents are black or Hispanic (Lee et al. 2020). Also, persons of color submit fewer mortgage applications than white individuals, and parental assistance is the largest reason why this gap occurs in mortgage applications (Charles and Hurst 2002; Lee et al. 2020).

Parental and family support provides great benefits to Millennials seeking homeownership, but this type of assistance is not widely available to many young adults. Frequently, the Millennials who receive help from their families possess certain privileges that already benefit their pursuit of owning a home.

Effects of the Foreclosure Crisis and Great Recession

The foreclosure crisis created by the housing bubble burst in the mid-2000s stirred a financial crisis globally, the Great Recession. As a result of these events, the changing structures of markets, employment, and mortgage financing, and overall culture has increased the challenges of homeownership for Millennials, more so than for their parents and grandparents. The foreclosure crisis and 2008 recession are interrelated, and contributors for both originated in the post-war era with housing policy and financial shifts involved with the neoliberalism of the 1970s and 1980s. Firstly, increased inequality and rising income stratification led to the positive perception of homeownership, as it helped to maintain markets with mortgage financialization, securitization, and debt accumulation, and renters became viewed as “losers” (Aalbers 2015). Secondly, the housing market became commodified, and all became active capitalists. Homeowners began to perceive their homes not for consumption, but rather for investment (Aalbers 2015). Lastly, mortgages were sold to international institutions, and the increase of mortgages (incentivized by low interest rates and prices for homes) grew the housing market and global economy. With the addition of new mortgages and the rising levels of unemployment in the United States, many struggled to pay mortgages, sell homes, or purchase homes during the housing crisis and later recession around 2008 (Aalbers 2015). Overall, these changes led to a housing market that is extremely challenging to navigate for young adults, who are less likely to own a home at the same age as previous cohorts. As a result, many young adults to choose alternative options, specifically because finding work is so difficult: delaying leaving or returning to the parental home or renting in the private market with roommates.

While these structural changes led to the foreclosure crisis and Great Recession, Millennials’ attitudes of homeownership were influenced by those events. However, most

American homeowners and renters still consider homeownership a beneficial long-term investment; in a Pew Research Center study conducted in 2011, 81% of adults held the opinion that owning a home was the best investment one could make in their life (Bracha and Jamison 2012; Hart Research Associates 2013; Pew Research Center 2011; Wilkinson and Delgadillo 2012). Attitudes about homeownership remained positive after the foreclosure crisis, and resembled the sentiments involved in previous recessions since 1978 (Engelhardt 2011).

Although Millennials remained overall positive about homeownership, the foreclosure crisis shook this cohort's confidence in homeownership. Bracha and Jamison (2012) found that adults under the age of 58 were more likely to grow less confident about homeownership if they personally experienced the effects of the foreclosure crisis or knew someone that did, as opposed to individuals that understood the event through information only. Contrary to these results, Drew and Herbert's (2013) comprehensive study surveying the Fannie Mae's National Housing Survey from 2010 to 2011 found no statistically significant link between personal exposure to the housing crisis and reduced positivity toward homeownership but discovered that young adults were less likely to view owning positively than older adults (Rohe and Lindblad 2013).

Still, Millennials remained generally positive about homeownership. Lindblad, Han, Yu, and Rohe (2017) found that Millennial renters possessed the strongest aspirations of homeownership of any age cohort in their survey of 2002-2014 data from the Community Advantage Panel Survey. Additionally, a Hart Research Associates (2013) study found that 84% of renters under age 40 desire to own a home someday. The foreclosure crisis dipped Millennials' confidence in homeownership, although many still consider buying a home a personal goal.

Compounded with the foreclosure crisis' challenging housing market, the Great Recession involved unfavorable labor market conditions for Millennials transitioning into adulthood. This recession involved a downturn for the housing market, a job market crisis, and a "credit crunch" for corporations and households (Lennartz et al.2016). The job market crisis led to a reduction in employment rates among young adults aged 18 to 34, which reduced Millennials' ability to pay for rental and owner-occupied housing, increasing co-residence within the parental home (Lennartz et al. 2016). The volatility of the housing market was more impactful on young adult homeownership than labor market conditions. Young adults experienced lower incomes, more precarious employment, reduced housing stock relative to the number of households, and higher mortgage deposit requirements than before the recession (Bleemer, Brown, Lee, Strair, and Van der Klaauw 2017; Lennartz et al. 2016).

Additionally, in areas of the country with lenient mortgage lending practices before the recession, Millennials experienced sharp drops in homeownership during and after the recession (Lennartz et al. 2016). This could be explained by the fact that many young adults possessed low incomes before the recession due to their lack of experience in the labor market. Post-recession mortgage regulations increased non-owning Millennials' reliance on family assistance in the pursuit of homeownership. Specifically, Millennials with lower incomes sought co-residence with parents and direct financial transfers from family members after the recession in order to recover financially and save for a home down payment (Druta and Ronald 2017).

Effect of Education

During the 20th century, the Western world experienced a massive increase in levels of educational attainment (Breen 2010; Millsap 2018). As high school graduations became

normative, more and more young adults received post-secondary education. The educational requirements for well-paying occupations increased as well. In the early 2000s, college tuition rose rapidly, but despite the increasing cost of post-secondary education, college enrollment rates, average years of schooling, and bachelor's degree completion rates were not impacted (Bleemer et al. 2017). Students during this time continued their education, as was necessary for competition in the labor market, but accumulated enormous amounts of student debt.

Although they may possess increased amounts of student loans, Millennials with higher levels of education are more likely to own a home than their peers with lower educational attainment (Gyourko and Linneman 1997). However, the effects of education are often delayed because young adults with higher educational attainment spend more of their young adulthood in educational institutions than in the labor market. Higher levels of educational attainment positively signal to lenders financial security and high future earnings, as well as positive expected returns to mortgage loans (Andrews and Sánchez 2011). Additionally, young adults with advanced degrees may delay homeownership until they settle into a job and community because of the increased relocation costs for homeownership individuals, as moving expenses are lower for renters (Bayrakdar et al. 2018).

Delaying Marriage

Many young adults purchase a home after settling with a serious, long-term partner. Couples possess more resources that aid in purchasing a home than single people. Frequently, assortative mating plays a role in the resources a couple possesses, where individuals choose a partner with similar or equal education levels, occupations, and family backgrounds, and thus similar financial resources (Mudler and Smits 1999). Couples are more likely to buy a home and

do so earlier than singles because they have greater access to wealth, often collecting two incomes and pooling resources together (Lauster and Fransson 2006). Young adult couples also are more likely to purchase a home in anticipation of their future lives. The likelihood of buying a home increases before a couple gets married and before they have children (Bayrakdar et al. 2018; Mudler and Smits 1999; Smits and Mudler 2008).

Additionally, marriage increases the probability of owning a home. In fact, married couples more likely to own homes than cohabitating couples and never married, divorced, or widowed singles (Andrews & Sánchez 2011; Mudler et al. 2015; Myers 2016). This trend may be due to several reasons. First, married couples may desire more space and privacy than rental properties can provide as they begin their lives together (Lauster and Fransson 2006). Second, married couples are assumed to be more stable than single individuals and more committed to their relationship than cohabitating couples, so they may be considered less risky by home lenders when investing their future and resources into a home (Cheung et al. 2020; Lauster and Fransson 2006; Smits and Mudler 2008). Third, it is a normative practice in many cultures for couples to own a home before or in marriage and may mark the couple's status and entrance adulthood (Cheung et al. 2020; Smits and Mudler 2008).

However, many Millennials are postponing marriage. In 2014, 27% of Millennials aged 28 to 34 were never married and had no children (Wang and Wilcox 2018). Some suggest the delay is possibly due to the economic shocks caused by the 2008 recession. At the macro-level, credit constraints may prevent Millennials from obtaining a mortgage, wealth constraints may challenge Millennials' ability to afford a down payment, and income restraints may limit the capacity to meet debt-to-income ratio limits (Cheung et al. 2020). These financial burdens have

caused many Millennials to remain single or to put coupling on hold to pursue financial security through higher education and career development (Martin, Astone, and Peters 2014).

Millennials that have invested in education specifically, see marriage returns later in adulthood; college-educated Millennial marriage rates peak and remain constant higher than the rates of less educated young adults. Additionally, minority and less educated Millennials are hit harder with post-recession economic constraints than college-educated Millennials, and thus have lower marriage rates (Martin et al. 2014). Numerous Millennials choose singlehood or to cohabitate with partners for long periods before marriage or in the place of marriage, and single Millennials buying homes rely more heavily on parental support, as they lack resources from a partner (Druta and Ronald 2017; Lauster and Fransson 2006; Mudler and Smits 1999). Thus, lower marriage rates among Millennials have contributed to a drop in homeownership rates for this cohort.

Child Rearing

Like postponing marriage, many Millennials have also delayed childbearing due to economic conditions. In times of economic uncertainty, young adults limit the number of children they have or postpone family formation until they have completed higher education and acquired stability in their careers (Millsap 2018; Mudler and Billari 2010; Nau, Dwyer, and Hodson 2015). The vast amounts of student debt burdens have caused many Millennials to prioritize financial stability before family formation, especially among women (Killewald, Pfeiffer, and Schachner 2017; Nau et al. 2015). Millennials that have children before or outside of marriage are more likely to be younger, possess lower levels of education, and thus earn lower wages than their married or unmarried peers without children (Wang and Wilcox 2018). The

timing of their children reduces the opportunities for higher education and potential work hours. Conversely, delaying childbearing until after marriage increases the likelihood of belonging to the middle class and having resources to afford a home in the future. Also, difficult entries into homeownership may also delay childbearing; in locations with high levels of homeownership and difficult access to mortgages, fertility reduces (Mudler and Billari 2010).

Childrearing affects homeownership in the United States. Becoming pregnant or having children often initiates a change in housing tenure (Cheung et al. 2020; Lauster and Fransson 2006). Within the first two years of having a child, a family is 40% more likely to own a home, and 60% more likely within the first 3 years of their first child's life (Clark et al. 1994). Some parents find they prefer owning a home with children for added benefits. The advantages of homeownership for families include spaciousness, child-friendly and safe locations and neighborhoods, and the lower probability of moving, which relates to stability during childhood (Mudler and Billari 2010; Smits and Mudler 2008). However, as many Millennials have delayed family formation, their rates of homeownership have also decreased.

Millennial Consumption Patterns

Millennials constitute the largest market in the United States since Baby Boomers and possess roughly \$172 billion per year in spending power (Cudmore, Patton, Ng, and McClure 2010; Ordun 2015). The cohort became adults when marketing strategies were transforming from the 20th century. This has led Millennials to consume differently than previous cohorts.

In the 1980s and 1990s, when Millennials were children, marketing campaigns sold goods and services according to a strategy titled the "3 F's," which included appealing to consumers' fantasies, feelings, and fun; however, since the 2000s, as the cohort became adults,

marketers play on experience, entertainment, exhibitionism, and evangelizing (Holbrook 2000). These “4 E’s” include appealing to consumer fun and emotion, but also allow consumers to play a more active role with the products they consume. For instance, the evangelism strategy in the “4 E’s” promotes educating and endorsing products that line up to one’s ideals, which Millennials practice on social media (Holbrook 2000). These strategies also have influenced Millennials to define personal identities and values with the products they consume (Ordun 2015).

In general, research has found that the Millennial cohort frequently overspend on consumer goods but lacks money management skills; many Millennials have entered the workforce without a basic understanding of financial literacy, saving funds, paying off debt, and investing for the future, which has caused them to manage money by trial and error (Cudmore et al. 2010). Their lack of money management skills coupled with long-term negative economic and employment conditions have led many to spend money quickly on consumable goods. Based on what feels good, Millennials may buy products according to emotion instead of rationality. Additionally, Millennials have been shown to make consumption decisions based on trust for a brand, the “coolness” of a product or company, and how a product relates to their identities and values (Cudmore et al. 2010; Ordun 2015). Because of their lack of financial literacy, Millennials may find it daunting and difficult to save a down payment or value the long-term benefits of investing in a home (Cheung et al. 2020; Cudmore et al. 2010).

Regional Factors

Regional factors remain another important component in Millennial homeownership. Concentration in urban cores may limit both desire and opportunities for homeownership due to

cost of living and availability. Previous studies have supported the common perception that Millennials enjoy urban living's conveniences—such as increased walkability, various transportation options—and have constructed the “back-to-the-city” movement (Delbosc and Ralph 2017; Lee 2020; Millsap 2018; Myers 2016; Okulicz-Kozaryn and Valente 2019). However, while many Millennials flocked to urban centers between 1990 and 2010, American suburbs are also sustaining growth with Millennial residents, especially among smaller and southern metropolitan areas (Lee 2020; Okulicz-Kozaryn and Valente 2019).

However, homeownership is less common in urban environments due to expensive housing markets and high costs of living (Mudler et al. 2015). Large cities with low housing supply elasticity attract highly educated Millennials with their urban amenities and increased job opportunities; however, these places lack sufficient housing stock for the demands of their populations and housing prices are costly (Choi et al. 2018; Millsap 2018). As the majority of Millennials still aspire to homeownership even after the 2008 housing and financial crisis, it is suggested that as Millennials continue in the life course, they will move to areas with more elastic and housing supply and affordable home prices (Bracha and Jamison 2012; Choi et al. 2018; Engelhardt 2011; Hart Research Associates 2013; Myers 2016).

STUDY OBJECTIVES AND HYPOTHESES

As shown, current research demonstrates that few Millennials have purchased homes due to a variety of economic obstacles, consumer profiles, and living preferences. However, little research has demonstrated the direct associations between economic precarity and homeownership. The objective of this study is to associate specific economic barriers experienced by Millennials with homeownership, including determining the relationships

between Millennial homeownership, student debt, and precarious employment, while controlling for a variety of key sociodemographic factors. This study's central hypothesis predicts that the likelihood of Millennial homeownership decreases with outstanding student debt and a lack of stable employment, as suggested by previous research (Arundel and Doling 2017; Baker et al. 2017; Cooper and Wang 2014; Dickerson 2016; Houle and Berger 2015; Mezza et al. 2020; Olsthoorn 2014; Poon 2019; Robb et al. 2020; Thompson 2018). Specifically, this study tests three hypotheses. First, possessing outstanding student debt will decrease the likelihood of owning a home among Millennials. Second, Millennials who are precariously employed—who work less than full-time, who lack employee protections through labor unions or employee contracts, who earn low wages, and those who do not receive employee benefits—are less likely to purchase a home. Last, Millennials who carry outstanding student debt *and* are precariously employed are less likely to be homeowners than their peers who do not have student debt and are stably employed.

DATA

The data for this study comes from the National Longitudinal Survey of Youth 1997 (NLSY97). This survey was created to collect data on experiences in youth labor force and education as well as other labor market behaviors. The survey longitudinally studies American youth born between 1980 and 1984. The data set has surveyed 8,984 participants since its conception in 1997. Interviews were conducted annually from 1997 to 2011 and biennially since then, finishing the most recent round of interviews in 2017.

I use a cross-sectional sample of data from the 2017 wave of the NLYS97. This year was chosen because the participants in the survey were between the ages of 33 and 37. A cross-

sectional sample from 2017 is used, rather than panel data, because the individuals in the data set are likely completing their final levels of education, establishing careers, developing serious romantic relationships, and forming families; past research has indicated that many Millennials tend to purchase homes in their late-twenties and thirties, several years after they finish their educational training (Cooper and Wang 2014; Mezza et al. 2020; Robb et al. 2020).

The data is modified in several ways. I first describe the complete sample to compare all Millennials in the data set. Then, following the example of Cooper and Wang (2014), Houle and Berger (2015), Mezza et al. (2020), and Robb et al. (2020), I limit the data by participants who attended or graduated post-secondary education to ensure this set of individuals had the opportunity to accrue student loan debt during young adulthood. Cases with missing data that correspond to respondents that were not interviewed in this round of the NLSY97 as well as cases with missing data are excluded from analysis. Additionally, weights have been added for my statistical tests. Accounting for these modifications, the full sample contains 6,543 participants and the number of post-secondary participants included in this study is 3,965.

Dependent Variable

The dependent variable for this study is homeownership. In the NLSY97, homeownership is recorded with a nominal variable that measures respondent housing. If respondents own their home—either by themselves or with a partner—they are coded as owners, and if respondents rent, they are considered non-owners.

Independent Variables

Two primary independent variables are included in the study, student debt and precarious employment. The first statistical test analyzes the relationship between dichotomous variables; thus, student debt is measured by the presence of student debt and precarious employment is measured by participation in part-time employment, self-employment, union or employee contract coverage, a dummy variable indicating income below the 2017 poverty line, and the lack of employee benefits including medical insurance, retirement plan, and paid and unpaid parental leave. In the second test, continuous variables for student debt and precarious employment are used. Student debt is measured by the amount of student debt currently owned. Precarious employment in the second test is measured by the number of hours worked per week and the number of paid vacation, sick, and personal days per year for employees.

Control Variables

Control variables in this study include sex, race and ethnicity, marital status, presence of spouse's student debt, amount of spouse's outstanding student debt, parental status, educational attainment, urban or rural residence, and geographic region of the United States. Sex is dichotomously measured by respondent biological sex: male or female. Race is coded by respondent race and ethnicity: non-Hispanic or Latino white, non-Hispanic or Latino black, Hispanic or Latino, and other. Marital status is coded according to relationship status among respondents: never married, married, and divorced, separated, and widowed. Presence of spouse's student debt and amount of spouse's outstanding student debt are measured by respondents' spouses possessing student debt left to pay and the amount their spouses owe in student loans. Parental status is measured according to the presence of biological children in the

respondents' households. If respondents reside with their biological children, they are considered parents; conversely, if respondents do not have their biological children living with them, they are not considered parents. This variable for parental status limits the definition of parenthood because respondents may co-parent children that live outside their home, take care of family members' children, or parent stepchildren. However, measuring parental status with the presence of biological children in the home provides a basic understanding of parents within the sample, according to traditional ideas of nuclear families. Educational attainment is measured by a continuous variable that measures the highest-grade respondents have ever completed, both for participants with and without post-secondary education experience. Urban or rural residence is coded according to the density of the area in which respondents live (either urban or rural areas). Geographic region is coded according to the United States census region in which respondents reside: Northeast, North Central, South, and West.

METHODS

To determine the effects of student debt and precarious employment on homeownership among Millennials, two types of tests are conducted. First, I begin with a set of descriptive statistics focused on homeownership across each of the predictors and sociodemographic control variables. Comparing the full and post-secondary samples determines whether the general population of Millennials and Millennials with higher levels of education in 2017 of the NLSY97 experience differing associations between student debt, precarious employment, and homeownership. Second, I create two sets of logistic regression models. The first model regresses the dependent variable—homeownership—on the key predictor variable, student debt. I begin with an empty model and progressively step in the control variables to understand the

relationship with student debt on homeownership. I run a second model focused on the measures of precarious employment. The third model includes both student debt and precarious employment in the model to better understand the relative contributions. I also model an interaction between the two, as student debt may have a stronger association for those in more precarious employment, and vice-versa. I use appropriate tests of significance to determine statistically meaningful differences using the cut-off of $p \leq 0.05$.

RESULTS

First, the analysis begins with a set of descriptive statistics for both the full sample and the sample containing only participants with post-secondary education experience, as listed in Table 1 below. There are a few important differences between both samples in terms of homeownership, income and employment, educational attainment, student debt, and marital status.

Table 1. Descriptive Statistics of Analytical Sample, (NLSY97 2017 Adults aged 33-37)

	Full Sample	Post-Sec. Sample
	%/Mean (s.d.)	%/Mean (s.d.)
Homeowners	14.20	17.68
Renters	43.90	38.08
Employment Status		
Full-time	57.90	62.21
Part-time	23.71	23.18
Self-Employed	7.85	7.42
Union/employment contract coverage	11.03	12.25
Mean individual income	\$37,744.84 (41323.30)	\$47,270.60 (45641.72)
Income below the 2017 poverty line	17.46	15.41
Receives employee benefits		
Healthcare	53.86	62.55
Paid parental leave	35.26	42.08
Unpaid parental leave	53.05	60.34
Retirement plan	49.94	59.26
Mean paid days off per year	10.04 (29.25)	12.79 (32.60)
Mean work hours per week	30.82 (19.97)	32.8 (19.09)
	(cont.)	

Table 1. Descriptive Statistics of Analytical Samples, (NLSY97 2017 Adults aged 33-37)

Educational Attainment		
Less than high school diploma	18.44	-
High school diploma	20.97	-
Some college	25.48	42.05
Bachelor's degree	15.21	24.10
Graduate school	19.90	32.85
Presence of student debt	9.95	15.67
Mean amount of outstanding student debt	\$3,380.14 (15,379.07)	\$5,464.23 (19,377.61)
Mean amount of debt for those with debt	\$33,976.03 (36,599.05)	\$34,872.83 (37,046.40)
Presence of spousal student debt	5.21	6.74
Mean amount of spousal outstanding student debt	\$1,512.142 (11255.73)	\$2,178.91 (13929.51)
Marital Status		
Never married	39.87	34.86
Married	47.29	54.25
Separated	3.00	2.11
Divorced	9.56	8.50
Widowed	0.29	0.28
Mean age	35 (1.39)	35 (1.39)
Female	51.58	55.41
Race & Ethnicity		
Non-Hispanic white	50.94	56.01
Non-Hispanic black	27.26	24.55
Hispanic or Latino	20.82	18.36
Other	0.98	1.08
Parental status	61.46	61.09
Urban residence	82.35	84.36
Region		
Northeast	15.27	15.54
North Central	20.56	20.70
South	41.63	39.99
West	22.54	23.77
<i>n</i>	6,543	3,965

Most importantly, a small portion of individuals in both samples are homeowners, and the post-secondary sample contains more homeowners and fewer renters than the full sample — 14.2% in the full sample and 17.7% in the post-secondary sample. Unsurprisingly, the mean individual income in the post-secondary sample is nearly \$10,000 higher than the mean individual income in the full sample. Individuals with incomes below the 2017 poverty level make up roughly 17.5% of the full sample and 15.4% of the post-secondary sample. While there are larger numbers of full-time employees in the post-secondary sample compared to the full sample, there is little difference between the number of hours worked per week between

samples; the mean hours worked per week is 30.8 hours in the full sample and 32.8 hours in the post-secondary sample. Additionally, fewer people in the full sample receive employee benefits, including healthcare, paid and unpaid parental leave, and retirement plans, than those in the post-secondary sample. People in the full sample receive slightly fewer paid days off work for vacation, sickness, and personal time than individuals in the post-secondary sample.

In terms of educational attainment, the majority of individuals in both samples have completed some college experience (25.5% of the full sample and 42.1% of the post-secondary sample), and graduate school degrees or experience is more common among individuals in the post-secondary sample compared to the full sample. Because the individuals in the post-secondary sample have been limited to people who have attended or completed college, it is expected that a larger number of people in this group possess student debt and owe larger sums of student debt than those in the full sample. The number of individuals with student debt is approximately 6 percentage points higher in the post-secondary sample than the full sample. The mean amount of student debt individuals still owe is about \$2,000 higher for those in the post-secondary sample than those in the full sample; however, for those who possess student debt in both samples, the difference between the amount of outstanding student debt is less than \$1,000. Additionally, a larger number of individuals' spouses in the post-secondary sample possess student debt and higher outstanding student debt balances than individuals' spouses in the full sample. Sharing student debt with spouses is more common in the post-secondary sample as a greater number of individuals are married compared to those in the full sample (47.3% and 54.3% respectively). Fewer people in the post-secondary sample are never married, separated, and divorced than those in the full sample.

Next, two sets of logistic regressions were conducted to determine the relationships between homeownership and having student debt and being precariously employment. The outcomes of the first model, which analyzed the effects of the presence of student debt and discrete measures of precarious employment, are listed in Table 2 below. The table provides coefficients for each variable with confidence intervals underneath the coefficients.

Table 2. Logistic Regression of Homeownership on the Presence of Student Debt and Discrete Measures of Precarious Employment, (NLSY97 2017)

	<u>Model 1^a</u>	<u>Model 2^b</u>	<u>Model 3^a</u>	<u>Model 4^b</u>
Presence of student debt	-0.138 (-0.500- 0.0024)	-0.124 (-0.320-0.177)	-	-
Part-time employment	-	-	-0.350** (-0.592- - 0.108)	-0.419** (-0.701- - 0.136)
Self-employment status	-	-	0.031 (-0.071-0.133)	0.070 (-0.072-0.213)
Union participation or employee contract coverage	-	-	-0.399* (-0.752- - 0.046)	-0.276 (-0.671-0.119)
Income below poverty level	-	-	0.091 (-0.171-0.353)	0.040 (-0.275-0.354)
Lacks employee benefits	-	-	0.267 (-0.183-0.716)	0.441 (-0.118-0.999)
Controls				
Spousal presence of student debt	0.149 (-0.237-0.536)	0.187 (-0.242-0.616)	-	-
Female	0.022 (-0.192-0.236)	-0.071 (-0.320-0.177)	0.074 (-0.154-0.302)	0.015 (-0.247-0.277)
Race				
Black	-0.275 (-0.571- 0.021)	-0.342 (-0.172-0.027)	-0.266 (-0.562-0.030)	-0.344 (-0.714-0.027)
Hispanic	-0.246 (-0.535-0.043)	-0.220 (-0.564-0.125)	-0.245 (-0.535-0.045)	-0.215 (-0.561-0.132)
	(cont.)			

Table 2. Logistic Regression of Homeownership on the Presence of Student Debt and Discrete Measures of Precarious Employment, (NLSY97 2017)

Other	0.011 (-0.898-0.920)	0.192 (-0.744-1.128)	0.075 (-0.831-0.982)	0.243 (-0.700-1.186)
Marital Status				
Married	1.413*** (1.094-1.732)	1.503*** (1.083- 0.1922)	1.431*** (1.113-1.750)	1.535*** (1.115-1.954)
Separated	-0.192 (-0.125-0.867)	0.329 (-0.959-1.616)	-0.212 (-1.275-0.852)	0.325 (-0.974-1.624)
Divorced	0.377 (-0.124-0.878)	0.501 (-0.174-1.149)	0.372 (-0.134-0.878)	0.493 (-0.161-0.148)
Widowed	0	0	0	0
Educational Attainment				
High school graduate	0.205 (-0.209-0.619)	-	0.204 (-0.218-0.625)	-
Some college	0.348 (-0.048-0.745)	-	0.347 (-0.056-0.751)	-
Bachelor's degree	0.482 (0.070-0.894)	0.138 (-0.175-0.450)	0.453** (0.028-0.879)	0.096 (-0.222-0.414)
Graduate school	0.576** (0.177-0.975)	0.244 (-0.45-0.534)	0.558** (1.44-0.971)	0.207 (-0.089-0.504)
Parental Status	-0.092 (-0.347-0.163)	0.075 (-0.236-0.386)	-0.069 (-0.322-0.184)	0.097 (-0.222-0.405)
Urban Area	-0.438** (-0.688- - 0.189)	-0.342* (-0.649- - 0.035)	-0.442** (-0.694-0- 0.190)	-0.365* (-0.673- - 0.057)
Region				
North Central	-0.327 (-0.673-0.018)	-0.501* (-0.918- - 0.308)	-0.36* (-0.707- - 0.014)	-0.520* (-0.937- - 0.103)
South	-0.193 (-0.509-0.124)	-0.135 (-0.503-0.233)	-0.241 (-0.561-0.078)	-0.162 (-0.531-0.208)
West	0.274 (-0.051-0.599)	0.259 (-0.119-0.636)	0.261 (-0.065-0.586)	0.271 (-0.406-0.647)
n	6,543	3,965	6,543	3,965
^a Full Model; ^b Restricted to attendance of post-secondary education				
sig: p<0.001 ***; p<0.01**, p<.05*; 95% CI				
Log likelihood	-4.97E+08	-3.53E+08	-4.95E+08	-3.51E+08
Pseudo r ² :	0.072	0.068	0.076	0.075

In Models 1^a and 2^b, for those in both samples, the association between carrying student debt is not statistically significant but demonstrates that possessing student debt slightly

decreases the likelihood of buying a home, especially for those in the post-secondary sample. This analysis also shows that married individuals are more likely to be homeowners than never married people in both samples; the odds of owning a home are between 4.1 and 4.5 times more likely for married individuals than for never married people in both the full and post-secondary samples. Those with graduate school experience or degrees are significantly 1.8 times more likely to own a home than those with less than a high school diploma in the full sample. Additionally, people living in urban environments, compared to rural areas, are significantly less likely to own a home in both samples. In Model 2^b, the results indicate that people residing in the North Central region of the United States are significantly less likely to be homeowners than those living in the Northeast.

Models 3^a and 4^b show that people who work part time are significantly less likely to own a home; the odds of homeownership for part-time employees is 0.7 times less likely than full-time workers in both samples. While not statistically significant, self-employed workers (who may or may not work precariously), individuals whose yearly income is below the 2017 poverty line, and people who lack employee benefits are more likely to own a home, while those belonging to a union or those covered by an employee contract are less likely to own a home in both samples. Married people are significantly more likely to own a home in both samples. In the full sample, those with either a bachelor's degree or higher are more likely to own a home than those with less than a high school diploma. However, that association does not carry over in the post-secondary sample. In both samples in Models 3^a and 4^b, those in urban areas and those who live in the North Central region are less likely to own a home than individuals in rural areas and the Northeast region of the country.

A test was also conducted that combined the presence of student debt and the discrete measures of precarity to determine the effects of possessing student debt and being precariously employed on Millennial homeownership. No distinct differences were demonstrated in that analysis and outcomes correlated with Models 1^a, 2^b, 3^a, and 4^b.

The results of the second test that regressed homeownership with continuous measures for student debt and precarious employment are depicted in Table 3 below.

Table 3. Logistic Regression of Homeownership on Outstanding Student Debt and Continuous Measures of Precarious Employment, (NLSY97 2017)

	<u>Model 5^a</u>	<u>Model 6^b</u>	<u>Model 7^a</u>	<u>Model 8^b</u>
Outstanding student debt	-4.03E-06 (1.16E-05- 3.55E-06)	-3.89E-06 (-1.15E-05- 3.69E-06)	-	-
Hours worked per week	-	-	0.007* (0.001-0.012)	0.008* (0.002-0.015)
Paid days off	-	-	0.001 (-0.003-0.003)	0.001 (-0.003-0.003)
Controls				
Spousal outstanding student debt	-1.51E-06 (-9.61E-06- 6.58E-06)	3.87E-08 (-7.68E-06- 7.76E-06)	-3.00E-06 (-1.13E-05- 5.26E-06)	-1.49E-06 (-9.24E-06- 6.27E-06)
Female	0.016 (-0.198-0.229)	-0.077 (-0.327-0.173)	0.065 (-0.153-0.284)	-0.022 (-0.277-0.233)
Race				
Black	-0.274 (-0.570-0.022)	-0.338 (-0.708-0.032)	-0.278 (-0.574-0.018)	-0.348 (-0.718-0.022)
Hispanic	-0.248 (-0.537-0.041)	-0.221 (-0.564-0.122)	-0.251 (-0.541-0.039)	-0.220 (-0.565-0.125)
Other	0.006 (-0.901-0.913)	0.189 (-0.743-1.121)	0.028 (-0.847-0.932)	0.211 (-0.719-1.141)
Marital Status				
Married	1.421*** (1.102-1.740)	1.511*** (1.091-1.931)	1.417*** (1.098-1.735)	1.510*** (1.092-1.928)
Separated	-0.191 (-1.255-0.873)	0.334 (-0.967-1.634)	-0.208 (-1.274-0.857)	0.323 (-0.980-1.626)
(cont.)				

Table 3. Logistic Regression of Homeownership on Outstanding Student Debt and Continuous Measures of Precarious Employment, (NLSY97 2017)

Divorced	0.380 (-0.121-0.881)	0.504 (-0.145-1.152)	0.361 (-0.143-0.864)	0.492 (-0.160-1.144)
Widowed	0	0	0	0
Educational Attainment				
High school graduate	0.208 (-0.206-0.622)	-	0.185 (-0.232-0.601)	-
Some college	0.350 (-0.046-0.746)	-	0.322 (-0.076-0.719)	-
Bachelor's degree	0.486*	0.141	0.422*	0.100
Graduate school	0.595*** (0.197-0.0993)	0.262 (-0.028-0.552)	0.496* (0.095-0.898)	0.182 (-0.109-0.473)
Parental Status	-0.090 (-0.345-0.165)	0.077 (-0.235-0.388)	-0.08 (-0.333-0.174)	0.093 (-0.215-0.402)
Region				
North Central	-0.321 (-0.668-0.026)	-0.450* (-0.914-0-0.075)	-0.319 (0.666-0.028)	-0.482* (-0.901- -0.063)
South	-0.191 (-0.507-0.124)	-0.133 (-0.500-0.234)	-0.191 (-0.508-0.125)	-0.124 (-0.491-0.244)
West	0.274 (-0.051-0.599)	0.259 (-0.119-0.636)	0.292 (-0.033-0.617)	0.294 (-0.082-0.671)
n	6,543	3,965	6,543	3,965
^a Full Model; ^b Restricted to attendance of post-secondary education				
sig: p<0.001 ***; p<0.01**, p<.05*; 95% CI				
log likelihood	-4.97E+08	-3.53E+08	-4.96E+08	-3.52E+08
Pseudo r ² :	0.072	0.068	0.073	0.071

In terms of student debt, Models 5^a and 6^b show that those with outstanding student loan balances are slightly less likely to be homeowners; however, the relationship is not statistically significant in either sample. Although the number of paid days off an employee receives per year (including vacation, sick, and personal days) does not yield a significant impact on homeownership, the number of hours worked per week increases the odds of owning a home in both the full and post-secondary samples. As a person works one additional hour per week, the likelihood of owning a home significantly increases by 1.0 times in both samples.

Like the first test, Models 5^a, 6^b, 7^a, and 8^b indicate that individuals with a bachelor's degree or higher are significantly more likely to own a home than people with less than a high school diploma in the full sample. In both samples, the odds of homeownership are greater for married individuals compared to those who never married and living in an urban environment lessens the odds of being a homeowner. Also, those living in the North Central region of the United States are significantly less likely to own a home, compared to people living in the Northeast.

Additionally, combining the outstanding student debt and the continuous measures of precarious employment does not yield results that differ from the individual tests for outstanding student debt, work hours per week, and paid days off.

A logistic regression was also conducted with interactions between the presence of student debt and the discrete measures of precarious employment. The results of that test do not provide any further insights on Millennial homeownership according to the shared impact of having student debt and being precariously employed than the first logistic regression performed in the analysis.

DISCUSSION

This study aimed to describe the associations between outstanding student debt and precarious employment on homeownership among Millennials. In uncovering the associations between my dependent variable—Millennial homeownership—and independent variables—student debt and precarious employment—I expected several outcomes. Firstly, I anticipated finding that Millennials with outstanding student debt have decreased odds of homeownership. Secondly, I predicted that Millennials who work part-time, are self-employed, are unaffiliated

with labor unions, who earn an income below the 2017 poverty line, and who work without employee benefits are less likely to purchase a home. Lastly, in order to accomplish this study's overall objective of explaining the impact of economic barriers experienced by Millennials on homeownership, I expected that Millennials with student debt and instable employment conditions are less likely to purchase a home. However, these hypotheses were unsupported by this study's findings.

As evidenced by the results of my statistical analysis, the presence of student debt, as well as outstanding amounts of student debt, do not significantly lessen the likelihood of homeownership for Millennials. With the various measures for precarious employment, part-time employment significantly decreases Millennial homeownership. Additionally, for all levels of education, the number of hours one works per week has a positive association with homeownership. In terms of demographic variables, several trends come to light. Being married very significantly increases the odds of homeownership for Millennials. Compared to Millennials who did not graduate from high school, having a bachelor's degree or higher increases the likelihood of homeownership. Lastly, living in urban areas lessens the chances for owning a home.

In response to this study's research hypotheses, these results demonstrate that student debt and precarious employment do not have statistically significant associations on homeownership among the Millennial cohort. Additionally, the outcomes of this study reflect the findings of previous research. With student debt, Lee et al. (2018) concluded that homeownership is less common among young adults with student debt, but Houle and Berger (2015) determined that the presence of student debt was not a significant factor in determining Millennials' ability to buy a home. Likewise, this study found that the relationship between

Millennial homeownership and the presence of student debt is statistically insignificant, and that having outstanding student loans is not a statistically significant factor in purchasing a home.

While considering the associations of Millennial homeownership and precarious employment, the largest correlation was discovered between part-time employment status and number of hours worked per week. Part-time employment lessens the odds of homeownership significantly, and this may be due to some assumed factors of precarity associated with part-time work including insecurity about long-time employment with a company or organization, the lack of regulatory policies and protections of part-time employees, and simply the lower incomes part-time workers earn compared to full-time workers (Cranford, Vosko, and Zukewich 2003). Additionally, as individuals in the sample work one hour more in the week, the probability of homeownership increases slightly, which may be correlated with increased wages.

For all tests, being married contributes to a higher likelihood of homeownership, which conforms to findings of past studies (Andrews & Sánchez 2011; Bayrakdar et al. 2018; Engelhardt 2011; Lauster and Fransson 2006; Mudler and Smits 1999; Smits and Mudler 2008). Additionally, more people in the post-secondary sample are married and fewer are never married, separated, and divorced compared to the full sample. This finding and the correlating relationship between marriage and homeownership may be related to the trend of higher educated individuals to delay marriage and seem to be more reliable mortgage applicants (Cheung et al. 2020; Martin et al. 2014). Consequently, those who are married in the post-secondary sample may be more recently married than those in the full sample, contributing to lower numbers of separated and divorced people. The full sample contains greater numbers of individuals who are separated and divorced, which correlates with a lower likelihood of

homeownership, as evidenced by previous research and this study's analysis (Andrews & Sánchez 2011; Mudler et al. 2015; Myers 2016).

The outcomes of the study's analysis also support previous findings that homeowners tend to be more educated than non-homeowners (Andrews and Sánchez 2011; Engelhardt 2011; Gyrouko and Linneman 1997.). Particularly, when comparing individuals in the full sample who represent people with all levels of education, graduating with a bachelor's degree or higher significantly increases the odds of homeownership. This may be contrary, however, to other studies that determined that educational attainment ceases to matter for financial wellbeing, as many college-educated individuals are not guaranteed well-paying jobs and are likely to accrue high amounts of student debt (Baker et al. 2017; Choi et al. 2018; Cooper and Wang 2014; Lennartz et al. 2015).

This study determines that living in an urban environment lessens the likelihood of homeownership for Millennials. Although past research has described Millennials' propensity for urban lifestyles, the decreased likelihood of homeownership in urban settings may be due to a variety of causes. In cities with tight markets—where demand for housing is high, housing stock is low, and prices are costly—Millennials may be unable to purchase homes, compared to suburban and rural residences with increased stock and lower prices (Lee 2020; Myers 2016). Additionally, many Millennials that are drawn to urban environments may be short-term residents and willing to relocate for future job opportunities (Lee 2020; Millsap 2018).

These results provide a clearer understanding that carrying student debt is not a significant deterrent from homeownership among Millennials. The conceptualizations of precarious employment included in this study reflect, however, that income is highly associated

with homeownership as it relates to employment status and the number of hours worked per week.

This study possesses limitations, particularly with data selection and analysis for measuring precarious employment and its effect on Millennial homeownership. These results may differ from the findings of existing research (Akdogan et al. 2019; Arundel and Doling 2017; Dotti Sani and Acciai 2018) as few characteristics of precarious employment are specifically measured in the NLSY97. Consequently, this study's sample may group precarious and stably employed individuals together to incorporate larger traits of precarity including freelance work, low wages, and lack of employee protections by labor unions. However, as Hennessy and Tranjan (2018) detail, precarious work extends to professional employees of all ages who work full-time and possess a large range of educational and overall work experiences. Thus, further research is needed to identify the complex forms of precarious employment and to include these measures in future data sets, including measuring employment in the gig economy. Also, while this study checked for multicollinearity with the ways of conceptualizing precarious employment, future research would benefit from using an index or scale to measure precarious employment.

Additionally, income has been found to be an important and key factor of homeownership, and this study is limited as it does not include income as a control variable in the analysis. A variable measuring the ratio of individual student-debt-to-income ratio may also be an important control variable to include in future studies. Also, including income as a control variable may influence the relationship between homeownership and marital status; the statistical significance of being married in this study may relate to the common practice of sharing incomes between married partners. Future research should also consider controlling for differences in

employment status, looking to individuals who are employed and to those who are unemployed or not in the labor market, to determine how employment status may influence the likelihood of homeownership.

Lastly, the review of past literature fails to consider the diverse experiences of Millennials. Much of the existing research has investigated assumptions and stereotypes about the Millennial cohort—about their co-residence with parents, massive indebtedness, delayed transitions into adulthood, and affinity for cities—but few studies have dug further to uncover the patterns of a broader range of Millennials. For instance, past studies have reviewed Millennials' relationships with urban areas (Choi et al. 2018; Lee 2020; Millsap 2018; Mudler et al. 2015; Myers 2016; Okulicz-Kozaryn and Valente 2019), but very few tackle Millennials in rural America, even though Millennials may inherit property and businesses from their families in rural areas. Additionally, although the cohort is demographically diverse, little information has been presented about Millennials who are racial and ethnic minorities. Particularly, for studies such as this, future research should focus on the housing and homeownership experiences of Millennials in various geographic regions and non-white Millennials. Moreover, while this study is focused on Millennials, future research will benefit from a comparison of this group to previous cohorts, to determine whether the challenges Millennials face with homeownership correspond to period or cohort effects. Additionally, while beyond the scope of this study, detailed focus on several topics may shed light on Millennials' pathways to homeownership and overall stability in adulthood. First, precarious employment varies from simple self-employment and part-time work, so secondary data should work to measure precarity with specified variables. Creating measures of precarious employment is especially relevant now as the COVID-19 pandemic has distinguished precarity among essential workers, who lack sufficient supplies of

personal protective equipment (PPE), federal and local governmental protections, and wages that fairly compensate workers for sacrificing their health on the job (The Lancet 2020). Second, secondary data sets should also work to comprehensively describe amounts of student debt individuals have accepted, paid, and owe to determine if these aspects of student debt affect homeownership. Thirdly, considering how other types of debt Millennials carry—credit card debt, auto loans, and personal loans—could also provide an understanding in how overall debt influences homeownership. Lastly, while the Census regions (grouped by state) used in the NLSY97 allowed for some geographical analysis of Millennial homeownership in this study, additional details about regional housing and labor markets could further reveal why homeownership is more or less likely in specific regions in the United States.

CONCLUSION

This research aimed to describe the associations between student debt and precarious employment on homeownership for the Millennial cohort. The life course approach emphasizes that homeownership, as a typical transition of young adulthood, as well as other life events like marriage and family formation, have been postponed among Millennials due to these economic obstacles. Life cycle theory, however, recognizes that young adults in general face financial strains as they begin their adult lives and establish their careers. Based on this study's quantitative analysis, it is concluded that Millennials who possess student debt and/or are precariously employed are not significantly less likely to own a home. Based on these findings, future research could address more efficient methods of measuring precarious employment to identify its complex forms in the labor market and implications for those who are precariously employed.

The economic barriers Millennials face with homeownership are deeply interconnected with period effects of the Great Recession and lifestyle factors. The foreclosure crisis and the Great Recession impacted conditions of the economic and housing markets available to Millennials as they transitioned into adulthood, influencing the jobs Millennials have been able to obtain. Particularly challenges experienced due to education and human capital gains also perpetuate barriers to homeownership among Millennials, as many do not possess sufficient resources to buy a home. The sacrifices of time and money for education may postpone independent living, marriage, and parenthood for many in this cohort, and consequently, many Millennials are less likely to afford homeownership and typical adult transitions.

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