Demography (2024) 61(6):1731–1757
DOI 10.1215/00703370-11680975
Published online: 4 December 2024

The Longevity Benefits of Homeownership: Evidence From Early Twentieth-Century U.S. Male Birth Cohorts

Casey F. Breen

ABSTRACT Owning a home has long been touted as a key component of the idealized "American Dream." Homeownership is associated with greater wealth and better health, but the causal impact of homeownership on health remains unclear. Using linked complete-count census and Social Security mortality records, I document Black–White disparities in homeownership rates and produce the first U.S.-based estimates of the association between homeownership in early adulthood and longevity. I then use a sibling-based identification strategy to estimate the causal effect of homeownership on longevity for cohorts born in the first two decades of the twentieth century. The results indicate that homeownership has a significant positive impact on longevity, which I estimate at approximately 4 months.

KEYWORDS Homeownership • Mortality • Complete-count census • United States

Introduction

Owning a home is considered a key component of the idealized "American Dream" (Samuel 2012), and the home is the single largest asset class for personal wealth in the United States (Apgar and Di 2006). Despite the considerable cultural and economic significance of homeownership in the United States, evidence on the health and mortality benefits of homeownership is relatively thin. Homeownership has been associated with positive health outcomes (Finnigan 2014; Laaksonen et al. 2009; Rolfe et al. 2020), however, less is known about whether this relationship is causal: does owning a home cause people to live longer lives? Or is the observed association driven entirely by unmeasured shared confounders between homeownership and longevity, such as individual or familial income and wealth or social capital?

Understanding the relationship between homeownership and longevity has both scientific and policy implications. There are striking historical and contemporary disparities in Black–White homeownership in the United States, with White Americans owning homes at nearly twice the rate of Black Americans for much of the twentieth century (Collins and Margo 2011). If homeownership has a causal effect on longevity, social policies that equitably expand homeownership opportunities for racial minorities may help mitigate the profound racial disparities in mortality. On the other hand, if the association between homeownership and mortality is driven entirely by shared

ELECTRONIC SUPPLEMENTARY MATERIAL The online version of this article (https://doi.org/10.1215/00703370-11680975) contains supplementary material.

confounders such as family wealth, such policies would have little or no effect on narrowing Black–White mortality gaps.

In this study, I use complete-count 1920 and 1940 census records linked to Social Security mortality records to investigate the relationship between owning a home in early adulthood and later-life longevity for the birth cohorts of 1905–1915. I first quantify the unadjusted difference in life expectancy between homeowners and renters. In separate analyses by race, I find a positive relationship between homeownership in early adulthood and later-life longevity for both Black and White men. Then, using a sibling-based identification strategy to ascertain whether this relationship is causal, I find that homeownership has a causal effect of 4 months on longevity. Further, I find homeownership has similar longevity benefits for both Black and White men, suggesting that differential *rates* of homeownership—rather than differential *benefits* of homeownership—is the larger contributor to racial inequality in mortality.

Background

Studies on Homeownership and Health and Mortality

Studies of the benefits of homeownership have centered on overall household wealth (Killewald and Bryan 2016; Turner and Luea 2009), wealth accumulation among low- and middle-income groups (Boehm and Schlottmann 2008), savings in retirement (Apgar and Di 2006), cognitive benefits for children (Haurin et al. 2002), and social capital and civic engagement (Manturuk et al. 2010; Rohe and Stewart 1996). Recently, there has been increasing interest in the health benefits of homeownership. There are theoretical reasons to expect that owning a home should be associated with better health outcomes, and some empirical evidence indicates that this is the case. Homeownership has been associated with higher self-rated health in England (Munford et al. 2020) and the United States, with White Americans having stronger associations than non-White Americans (Finnigan 2014). Other research has linked homeownership to improved mental health (Elsinga et al. 2007; Kearns et al. 2000; Manturuk 2012; Rossi and Weber 1996). Few studies have investigated the relation between homeownership and mortality, and none have done so in the United States. In Finland, the magnitude of the association between homeownership and longevity was found to be substantial: a study of Finnish homeowners found that owning a home—as opposed to renting—was associated with a 29% lower all-cause mortality hazard rate after adjusting for socioeconomic factors, level of urbanization, and household composition (Laaksonen et al. 2009).

Because of the large positive selection into homeownership, identifying any causal effect of homeownership on health is challenging. Munford et al. (2020) used an innovative strategy, exploiting exogenous variation in the "Right to Buy" policy implemented in England. The "Right to Buy" policy allows long-term renters of publicly owned properties to buy their home at a large discount. Using geographic heterogeneity in maximum discount caps as an instrument, the study found homeownership increases self-assessed health by 0.19 points on a 5-point scale. However, it is unclear whether this causal relationship between homeownership and self-rated health would also extend to the U.S. context, or whether a similar causal relationship

would also be found between homeownership and longevity. As summarized by Dietz and Haurin (2003:434): "Drawing conclusions about the causal relationship between housing tenure status and health requires additional empirical investigation using rigorous methods." To date, there is no evidence on whether homeownership in the United States has a causal effect on longevity. This study addresses that gap.

Historical Context

Homeownership in the United States has a long, fraught history and is shaped by generational wealth, class privilege, and racism. This has resulted in striking Black–White disparities in homeownership rates stemming from racist, exclusionary policies, as well as disparities in overall home quality and lending terms driven by predatory marketing and loan practices targeting Black Americans (Taylor 2019). To contextualize the findings of this study within the broader literature on homeownership, it is essential to consider this historical legacy.

In the aftermath of the Civil War, Black Americans stood to inherit little land or property, as their parents were predominantly enslaved. During the Reconstruction Era of 1863–1877, land seized by the federal government during the Civil War was not set aside for the exclusive settlement of Black families as many advocated, but rather was returned to its former Confederate owners by presidential decree, thus dispossessing thousands of Black landowners (Davis 1992). Most Black Americans had little choice but to resume working on White plantations as wage laborers or sharecroppers and had limited hope of upward economic mobility. In 1870, only 7.7% of Black male household heads owned homes, while 57% of White male household heads owned homes (Collins and Margo 2011).[1] During this period, the modern mortgage markets were practically nonexistent, and purchasing a home often required down payments of 50% or more, effectively barring most Black Americans from owning homes.

Black homeownership rates did increase nearly threefold between 1870 and 1910 (Figure 1), likely driven by modest increases in educational and occupational attainment among Black Americans (Collins and Margo 2011). However, this rate increase did not close the Black–White gap, and beginning in 1910, homeownership among Black Americans stagnated. The first wave of the Great Migration saw a dramatic rise in the Black population in the North, with most Black Americans settling in urban areas proximal to business districts with employment opportunities (Boustan 2017). While these urban jobs paid better than agricultural employment in the South, this often did not translate into higher rates of homeownership. The nature of urban jobs being situated in densely populated areas led to significant commuting costs, prompting most workers to seek housing in urban regions with primarily rental units

[1] In this study, I focus on household heads, who were the primary renters or owners of a dwelling. This allows me to better isolate the relation between homeownership and longevity by excluding adults living in units owned or rented by someone else (e.g., parents). The analysis is also limited to men owing to the difficulties of linking women in the 1940 census to mortality records because of surname changes at marriage. Exploring the relationship between homeownership and longevity for women is an important avenue for future research.

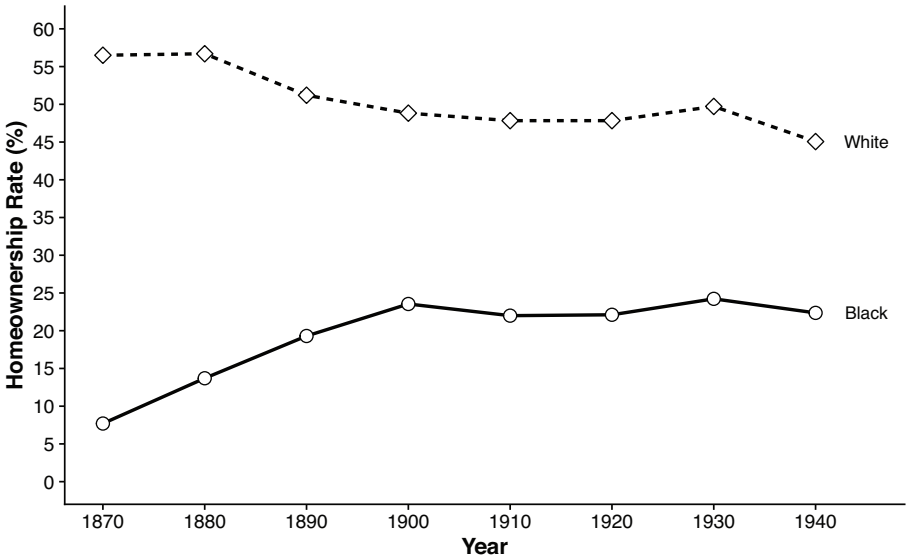

Fig. 1 Black–White differences in homeownership rates among male household heads between 1870 and 1940. To calculate homeownership rates in 1900, 1910, 1920, 1930, and 1940, I used complete-count census records (Ruggles et al. 2020). For earlier census decades, I used estimates of the homeownership rates from Munford et al. (2020).

available. Additionally, Black Americans faced racial discrimination and bias when attempting to purchase homes or relocate, as White Americans opposed the influx of new Black residents.

Between 1870 and 1930, rates of homeownership for Whites declined modestly. This decrease was primarily caused by increases in real income being offset by migration away from rural areas and farms into dense urban areas that offered less opportunity for homeownership (Collins and Margo 2011). The gap between homeownership rates for Black and White Americans was nearly cut in half during this period. Yet the gap still remained stark, with White male household heads owning homes at rates approximately 25 percentage points higher than their Black counterparts from 1900 to 1940.

This study focuses on homeownership measured in the 1940 census. The major historical event leading up to this census was the Great Depression, which saw the greatest evaporation of wealth in U.S. history. During this period, many Americans lost their home: the homeownership rates observed in the 1940 census were lower than the homeownership rates in any other twentieth-century decennial census (Collins and Margo 2011). Mortgage foreclosure rates were highest in boom cities that had experienced the highest rates of construction in the middle to late 1920s.

In the 1930s, racism in mortgage markets was rampant. During this period, the federal government first entered the residential mortgage market with two programs: the Home Owners Loan Corporation (HOLC) and the Federal Housing Administration (FHA). The HOLC produced a series of color-coded maps (the original redlining), which have been widely cited as increasing racial segregation in housing and being a source of contemporary wealth inequality (Rothstein 2017). The long-term

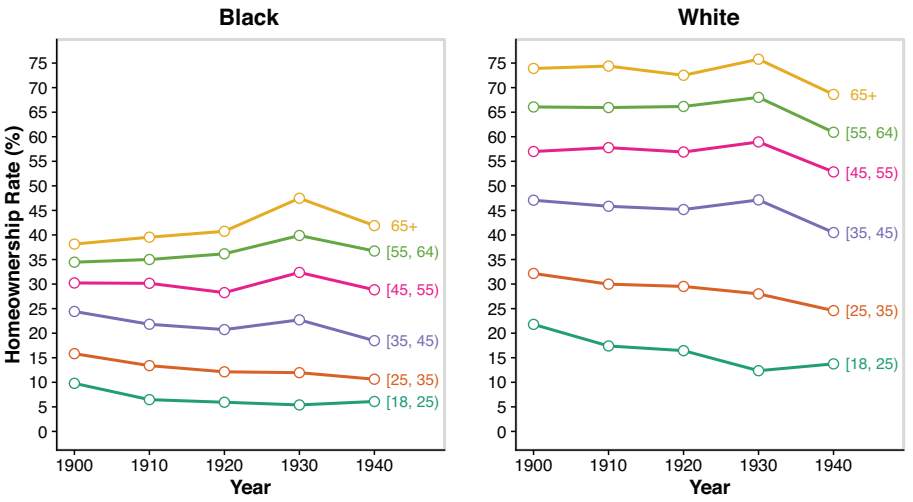

Fig. 2 Black–White differences in homeownership rates by age category between 1900 and 1940. Calculations are based on complete-count decennial census records (Ruggles et al. 2020).

effects of redlining are now an ongoing area of debate (Aaronson et al. 2023; Fishback et al. 2021), but there is conclusive evidence that Black Americans were discriminated against in the mortgage markets (Chivers 1949; Michney and Winling 2020; Taylor 2019). Redlining also created disparately lower home values and drove economic isolation in Black neighborhoods. However, the ultimate effect of redlining on Black–White mortality disparities was modest, and redlining was only one component of a larger public–private effort conflating the racial composition of neighborhoods and financial risk (Graetz and Esposito 2023).

Figure 2 shows the powerful age gradient in homeownership for both Black and White Americans in 1940. While less than 10% of Black male household heads aged 18–25 were homeowners in 1940, more than 40% of such household heads aged 65 or older owned homes.

In this study, I observe homeownership status between the ages of 24 and 35, and many people categorized as renters will become homeowners later in their life course. However, homeownership exit—the transition from homeowner to renter—is rare: only 6% of household head homeowners became renters over a 40-year observation period between 1968 and 2009 (Sharp and Hall 2014). In this sense, my paper builds an evidentiary base, demonstrating differences in life expectancy for those who own homes and those who rent in early adulthood. The homeowners observed generally will continue to be homeowners throughout their life course, while renters may or may not become homeowners later in life.

Theoretical Framework

There are several compelling theoretical reasons to expect the relationship between homeownership and longevity to be causal. Figure 3 shows several potential mechanisms linking homeownership with increased life expectancy. Although this study

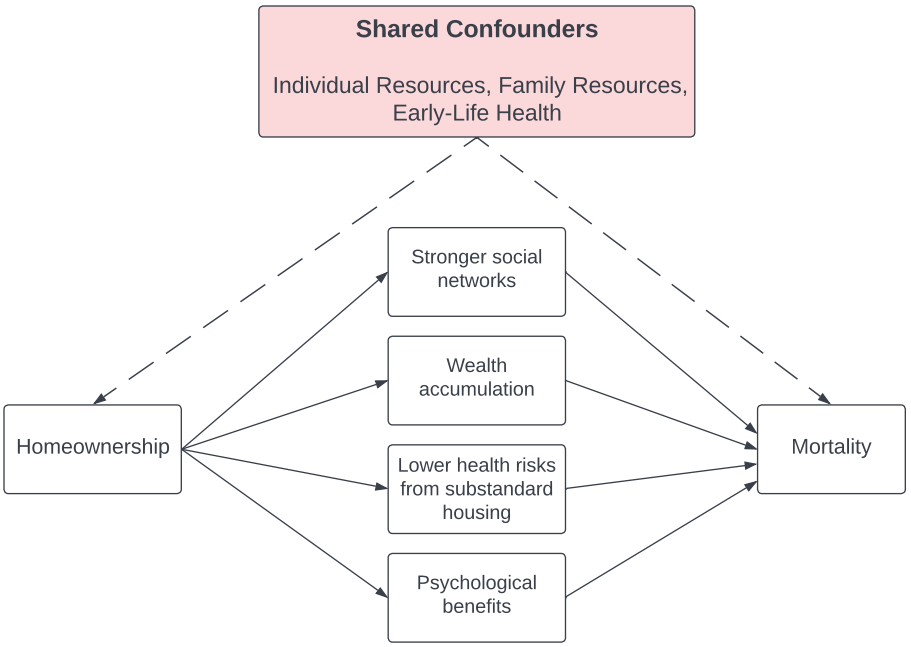

Fig. 3 Causal pathways between homeownership and mortality. Solid lines show the causal pathways, and dashed lines show the potential confounding pathways.

advances a causal argument, because of the challenges of untangling various interconnected pathways using available data, it is not possible to pinpoint the precise contribution of alternative mechanisms. Instead, it is useful to consider the primary theoretical pathways that might, individually or in concert, account for the longevity benefits of homeownership. Given that I observe homeownership early in the life course, I see the longevity benefits of homeownership through a cumulative advantage perspective (DiPrete and Eirich 2006). That is, many of these potential mechanisms will compound and interact throughout the life course to create mortality disparities between homeowners and renters.

Wealth Accumulation

One causal pathway through which homeownership can affect longevity is wealth accumulation. A home is the single largest component of nonpension wealth in the United States (Apgar and Di 2006), and homeownership is a key vessel for wealth accumulation. There are three primary reasons why homeownership is wealth enhancing. First, homeownership may reduce housing costs by allowing homeowners to save on high rental prices and enjoy tax benefits in the form of tax deductions on mortgage interest and no capital gains tax (Killewald and Bryan 2016). Second, homes generally appreciate in value over time slightly more rapidly than inflation, although this is location and period dependent and may be offset by maintenance costs (Harding et al. 2007). Finally, monthly mortgage payments for homeowners

encourage savings, which can buttress economic security in retirement (Boehm and Schlottmann 2008).

Estimating the causal effect of homeownership on wealth is challenging because wealth prior to homeownership is a large confounder of the relationship between owning a home and wealth. Further, it is impossible to observe an individual's counterfactual use of financial resources (e.g., spending and investment) if they did not purchase a home. However, the empirical evidence to date confirms that homeownership does indeed have a causal effect on wealth. Turner and Luea (2009) found an additional year of homeownership is associated with a $15,000 annual increase in wealth holdings for high-income groups and a $6,000–$10,000 increase for low-income groups. However, their analysis did not control for wealth prior to owning a home and likely overstates the relationship between wealth and homeownership. Di et al. (2007) estimated the effect of homeownership on personal wealth over a 12-year period, controlling for baseline wealth and pretrends in wealth accumulation using data from the Panel Survey of Income Dynamics. They found that each additional year of homeownership caused a $3,000–$14,000 increase in wealth annually. Herbert et al. (2013) also controlled for baseline wealth, estimating a net wealth increase of approximately $9,500 from homeownership, with some modest discrepancies for White Americans ($10,542) and Black Americans ($8,474). Finally, Killewald and Bryan (2016) employed marginal structure models and the National Longitudinal Survey of Youth 1979 (NLSY79) between 1985 and 2008 to investigate the effect of homeownership on wealth. They found that homeownership was wealth enhancing, but to a smaller extent than other estimates: an additional year of homeownership created a $6,800 increase in wealth. In sum, across different data sources, time periods, and estimation strategies, owning a home has repeatedly been found to be wealth enhancing.

Social Networks

A second pathway between homeownership and lower mortality is stronger community integration and social support networks. Homeowners stay in a unit longer than their renter counterparts (Rohe and Stewart 1996), which fosters stronger feelings of community attachment, integration, and commitment to their neighborhood. The empirical evidence to date indicates that homeowners are more likely to be socially and politically involved, even after controlling for socioeconomic characteristics (Rohe and Stegman 1994; Wandersman 1981). Additionally, homeowners' vested interest in the conditions of their neighborhood often leads to higher rates of participation in local neighborhood organizations and interactions with other members of the neighborhood (Davis and Fine-Davis 1981).

Such neighborhood interactions help homeowners build more social capital and become more socially integrated than their renter counterparts (Manturuk et al. 2010). Higher social integration and social capital have a clear positive impact on health outcomes (Berkman et al. 1992; Berkman and Syme 1979; Smith and Christakis 2008). Social support can serve as a moderator of life stress and lead to higher compliance with medical regimes and faster recovery, and have protective effects against depression and other conditions (Cobb 1976).

Housing Conditions

A more direct pathway between homeownership and longevity is through superior housing conditions. Living in adequate housing is strongly linked to longevity. Renters are more likely than homeowners to experience infectious diseases, injuries, and chronic conditions (Krieger and Higgins 2002). Rental units throughout the nineteenth and twentieth centuries were often overcrowded, dirty, and improperly ventilated, conditions that can facilitate the spread of tuberculosis, influenza, pneumonia, and other infectious diseases. Racial differences in mortality at the beginning of the twentieth century were largely attributed to disparities in respiratory diseases (Feigenbaum et al. 2022), highlighting the impact of racial segregation in housing on population health. Quotas that reduced overcrowding in rental units had a considerable impact on infectious disease mortality (Ager et al. 2024), demonstrating the connection between adequate housing and longevity.

Compared with renters, homeowners have more autonomy to make improvements and modifications to enhance the living conditions of their home. Homeowners also have more financial incentives to make these modifications, because such modifications can increase their home's value. Controlling for the characteristics of the occupant and unit, homeowners invest more in home maintenance and repairs than do renters (Galster 1983). Owning a home has been associated with a 13–23% increase in the quality of the home environment, largely attributable to home investments that lower levels of lead-based paint and ameliorate unhygienic living conditions, structural hazards, and other factors (Haurin et al. 2002).

Psychological Benefits

Finally, homeownership has the capacity to promote well-being through higher levels of self-efficacy, self-control, and stability. Homeowners also report greater feelings of control and self-determinism over their lives because their external environment is predictable and dependable (Manturuk 2012). Additionally, homeowners are at lower risk of the instability caused by eviction; frequent relocations have been associated with increased risks of anxiety and other mental health issues (Acharya et al. 2022; Manturuk 2012). Moreover, homeowners report higher levels of satisfaction in their living conditions than do renters, which factors into overall levels of life satisfaction.

Owning a home is also a key way of communicating social status. The higher social status of homeowners may increase their self-esteem and overall life satisfaction (Rakoff 1977; Tremblay and Dillman 1983). Additionally, being part of the dominant "successful" group can avoid associated stressful downward comparisons with others (Elsinga et al. 2007). Together, these psychological well-being benefits promote physical and mental health and, ultimately, longevity.

Data

This study uses digitized complete-count census records, mortality records, and record linkage techniques to construct a longitudinal panel of male siblings. Specifically, we

use the CenSoc-DMF file (Goldstein et al. 2021), which links the IPUMS complete-count 1940 census (Ruggles et al. 2020) with mortality records from the Social Security Death Master File (DMF). The DMF is a collection of more than 85 million death records reported to the Social Security Administration, capturing 95%+ of deaths occurring after age 65 between 1975 and 2005 (Alexander 2018; Hill and Rosenwaike 2001). I limit the analysis to men born in 1905–1915 who were between the ages of 24 and 35 when they were enumerated in the 1940 census. I focus on these cohorts because I can both observe these cohorts as household heads in the 1940 census and capture much of their mortality in our mortality observation window. I use this sample to study the association between homeownership and longevity ($N = 1{,}361{,}883$).

To identify brothers, I link men in the 1940 census—which contains no information allowing for the systematic identification of adult brothers—back to the 1920 census. From the earlier census, I use information from household rosters to identify biological brothers aged 4–15 and living together in the same household in 1920. I use this sample to identify the causal effect of homeownership on longevity ($N = 84{,}945$). This process is illustrated in the Lexis diagram shown in Figure 4.

The 1940 Census

The 1940 census was conducted in April 1940, at the tail end of one of the most eventful decades in U.S. history. The 1930s began with the Great Depression, the longest and deepest depression in the twentieth century. Between 1929 and 1933, employment decreased by 17.4% (Margo 1993) and manufacturing contracted by more than 30% (Lee and Mezzanotti 2017). To combat the Great Depression, President Franklin Roosevelt introduced a series of unprecedented expansions of government-allocated aid to provide immediate relief and promote economic recovery in his First and Second New Deal. The questions asked in the 1940 census reflected this time of heightened social awareness: for the first time, a decennial census included questions on wage and salary income, educational attainment, and employment as part of an emergency relief program.

The 1940 census also included several questions on homeownership. First, census enumerators asked whether the home or dwelling unit was owned or rented, regardless of whether it was still being paid for by a mortgage (Ruggles et al. 2020).[2] Second, enumerators collected information on the value of the home for homeowners and the amount of monthly rent paid for renters. Unless the home was recently purchased, enumerators were instructed to estimate the current market value of the home. Specifically, they were instructed to "represent the amount for which the home, including (except on a farm) such land as belongs to it, would sell under ordinary conditions not at forced sale" (Ruggles et al. 2020). Finally, the 1940 census included a question about whether the household was on a farm.

[2] A household was defined as "a family or any other group of persons living together, with common housekeeping arrangements, in the same living quarters." One member of each household—almost exclusively a man—was designated as the "household head." The household head reported on the other members of the household to the enumerator. A home or dwelling unit was marked as "owned" if the household head or another member of the family owned the home.

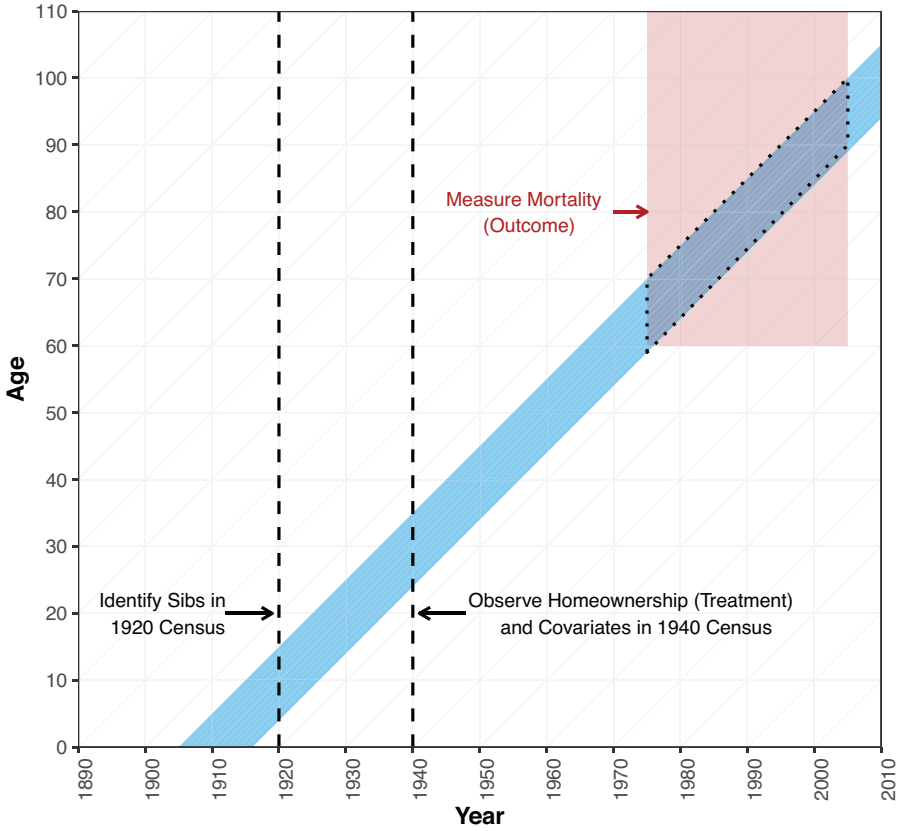

Fig. 4 A Lexis diagram illustrating the analytic sample. The focal birth cohorts (1905–1915) are highlighted in blue. I first observe these men in childhood between the ages 4–15 living together in the same household in the 1920 census, from which I use information from the household roster to establish sets of brothers. Next, I observe these individuals in the 1940 census, which provides homeownership status and other characteristics, such as educational attainment, wage and salary income, occupation, and marital status. Finally, I observe these men dying from age 60 onward in the DMF mortality coverage window of 1975–2005.

Sibling Sample

The 1940 census does not include information allowing for the systematic identification of adult siblings living in different households. To overcome this, I identify brothers in the 1920 census living in the same household using household rosters. I focus on the birth cohorts of 1905–1915, who are between the ages of 4 and 15 in the 1920 census. I link the brothers identified in the 1920 census to the 1940 census using linkages provided by the Census Linking Project (Abramitzky et al. 2020). The linkages were constructed using the ABE algorithm (Abramitzky et al. 2012, 2014; Abramitzky et al. 2021), which links on first name, last name, place of birth, and year of birth. This algorithm first standardizes first names to account for common misspellings or nicknames (e.g., Robbie → Robert). It then establishes matches on the basis of an exact match on first name, last name, and place of birth, while allowing for some flexibility (±2 years) on birth year. This choice to use a relatively conservative

"exact match" results in a smaller analytic sample, but minimizes the number of false matches, which pose the greatest threat to statistical inference (Ruggles et al. 2018).[3] For this study, false matches would mean that I am not doing actual within-sibling comparisons, threatening my sibling-based identification strategy.

To link the set of siblings to their mortality records, I use the publicly available CenSoc-DMF (V2.1) dataset (Goldstein et al. 2021). This file links men in the 1940 census to Social Security mortality records in the DMF again using the ABE record linkage algorithm (Abramitzky et al. 2020). The DMF includes nearly complete death coverage from 1975 to 2005 for individuals aged 65 or older (Alexander 2018; Hill and Rosenwaike 2001), and approximately 30% of these deaths are successfully matched back onto a 1940 census record (Breen and Osborne 2022). For brothers to be included in the sibling sample, two or more brothers living in the same household in 1920 must have been successfully linked to both the 1940 census and the DMF mortality records.[4]

In Table S1 (online appendix), I compare the composition of the matched samples to the composition of all men aged 24–35 in the 1940 census. Overall, the matched samples are reasonably representative of the general population, although men with higher socioeconomic status are slightly overrepresented. Further, consistent with other linkage efforts, Black Americans are underrepresented. This underrepresentation can be attributed to lower rates of linkage due to higher rates of age misreporting and levels of name homogeneity (Goeken et al. 2011).

To summarize, I create a longitudinal panel of brothers by first extracting all records for children aged 4–15 in the 1920 census ($N = 16{,}321{,}702$). I then link the 1920 census to the 1940 census using ABE linkages ($N = 4{,}446{,}863$), corresponding to a linkage rate of 27% (Abramitzky et al. 2020). Next, I link these individuals to their death records in the DMF ($N = 1{,}443{,}728$). Finally, I identify sets of brothers in these data ($N = 84{,}945$) and restrict to household heads. Of these sibling pairs, 34.5% were discordant on homeownership status.

Methods

Unadjusted Difference in Life Expectancy Between Homeowners and Renters

I fit separate ordinary least-squares (OLS) regression models for Black and White men with the full linked sample ($N = 1.4$ million) to estimate the unadjusted difference in life expectancy between homeowners and renters. Because the CenSoc-DMF contains deaths only for the left and right ("doubly") truncated window of 1975–2005, the

[3] As a robustness check, I use the more strict ABE-Conservative algorithm, which requires names to be unique within a ± 2-year window. Results are robust across linkage algorithms (for details, see section A.1 in the online appendix).

[4] If I could not successfully link an individual from the 1940 census onto the mortality records, this may be due to (1) the individual died outside of the mortality observation window or (2) I was not able to establish a link using the record linkage strategy. Therefore, conventional methods for working with censored data are not appropriate in this setting (Goldstein et al. 2023), and the analysis is restricted to sibships in which two or more siblings were successfully linked to both the 1940 census and the DMF mortality records.

magnitude of the reported differences across groups will be smaller than if I had the complete window of deaths (Goldstein et al. 2023). For each birth cohort, I observe a different window of ages of death. To account for this, I include birth-year fixed effects to control for the different distribution of birth years across population subgroups. I fit models of the form

$$D_i = \beta_0 + \lambda_{byear} + \delta_{homeown} + \epsilon, \tag{1}$$

where D_i is age of death, β_0 is the general intercept, λ_{byear} is a fixed effect for a given year of birth, and $\delta_{homeown}$ is a dummy variable for whether an individual is a renter or a homeowner. The model described by Eq. (1) includes only fixed effects for year of birth, giving us the unadjusted difference in life expectancy between homeowners and renters. I fit this model separately for Black ($N = 65{,}053$) and White ($N = 1{,}296{,}830$) Americans.

Identification Strategy

Theoretical Estimand

The primary inferential goal of this study is to estimate the causal effect of homeownership on longevity. To estimate this quantity, I first define the theoretical estimand, which is the precise quantity we are interested in estimating (Lundberg et al. 2021). Theoretical estimands are composed of two key building blocks: *unit-specific quantity* and *target population*. The unit-specific quantity is a quantity defined for each unit of the population. The target population is the set of units over which the unit-specific quantity is aggregated.

In the analysis, the unit-specific quantity is the counterfactual difference in life expectancy if a male household head owned a home in early adulthood versus if they rented a home in early adulthood. The target population is all men born in the U.S. between 1905 and 1915. Using the potential outcome framework (Imbens and Rubin 2015), I define our causal estimand (Ψ) as an average treatment effect (ATE):

$$\underbrace{\underbrace{\frac{1}{n}\sum_{i=1}^{n}}_{\substack{\text{Mean over every } i \text{ among} \\ \textit{male household heads}}}}_{\textit{Target Population}} \left(\underbrace{\underbrace{D_i(homeowner)}_{\substack{\text{Life expectancy if} \\ \textit{homeowner in early adulthood}}} - \underbrace{D_i(renter)}_{\substack{\text{Life expectancy if} \\ \textit{renter in early adulthood}}}}_{\textit{Unit-Specific Quantity}} \right). \tag{2}$$

Empirical Estimand

It is impossible to estimate the theoretical estimand Ψ using only the observational data, as we can observe only one potential outcome. To convert the theoretical estimand into an empirical estimand,[5] I must define a quantity that can be estimated from

[5] The key difference between the theoretical estimand and the empirical estimand is that the theoretical estimand is the theoretical quantity we are interested in learning about. Stating the theoretical estimand is

the data alone. This requires one to formulate an empirical estimand that can be measured with the available data (Lundberg et al. 2021).

To estimate the empirical estimand from the observed sample of siblings, I fit OLS regression models of the form

$$D_i = \beta_0 + \lambda_{byear} + \delta_{homeown} + \boldsymbol{\beta}\mathbf{X}_{controls} + \epsilon \tag{3}$$

$$D_i = \beta_0 + \lambda_{byear} + \delta_{homeown} + \boldsymbol{\beta}\mathbf{X}_{controls} + \Omega_{SiblingFE} + \epsilon, \tag{4}$$

where D_i is age of death, β_0 is the general intercept, λ_{byear} is a fixed effect for a given year of birth, $\delta_{homeown}$ is a dummy variable for whether an individual is a renter or a homeowner, $\boldsymbol{\beta}$ is a set of regression coefficients, and $\mathbf{X}_{controls}$ is a vector of adjustment variables. The control variables include educational attainment in years, race, wage and salary income, occupation, urbanicity, state of residence in 1940, marital status, and birth order. For birth order, I include an ordinal control variable for being the eldest observed child in the sibship. Because the sibships include between two and five brothers, the birth-order control captures a between-sibship effect, not simply a within-sibship effect. I include this control because it is plausible that parents may have made more of an investment in their elder sons.[6]

This class of models has been used to estimate the effect of education on longevity (Halpern-Manners et al. 2020), neighborhood effects on social mobility (Chetty and Hendren 2018), and the effect of social programs on educational policies (Currie and Thomas 1995). The idea behind the sibling fixed-effect models is to control for unobserved heterogeneity within families (Conley et al. 2007):

$$D_{ij} - D_{is} = \boldsymbol{\beta}(\mathbf{X}_{ij} - \mathbf{X}_{is}) + (\alpha_i - \alpha_i) + (\mu_{ij} - \mu_{is}), \tag{5}$$

where D_{ij} is the age of death of individual i in household j, D_{is} is the average age of death of siblings in household j, $\mathbf{X}_{ij}$ is a vector of control variables for individual i in household j, and $\mathbf{X}_{is}$ is a vector of control variables for siblings in household j. In this equation, the error term is now broken down into two different components: α_i, the sibling fixed effect, and μ_{ij}, the individual-level error term for individual j in family i. By differencing across siblings in each family, I effectively eliminate the unobserved sibling effects. In this setting, the inclusion of sibling fixed effects is critical because they partially eliminate unobserved contextual factors such as family wealth and genetic factors from the model (Halpern-Manners et al. 2020).

Like all attempts at establishing causality with observational data, this approach has several limitations. The sibling fixed-effect design identifies only within-family variation, not between-family variation. If there is unobserved individual-level heterogeneity that is correlated with homeownership, estimates of the causal effect of homeownership on longevity may be biased. Moreover, although siblings provide

helpful for precisely stating the research goal. The empirical estimand states the empirical quantity that the data and statistical methods allow us to estimate.

[6] In the sibling subsample, I investigate whether there is differential investment into eldest siblings. If true, we would expect that parental investments on average would benefit the eldest sons in other arenas. However, we find that, adjusting for birth year, being the eldest sibling in a sibship in the sample is not associated with higher educational attainment nor higher wage and salary income, as we would expect if parents made differential investments: there is a negligible difference between brothers, with eldest brothers on average having 0.0652 fewer years of education and a wage and salary income that is $9 lower.

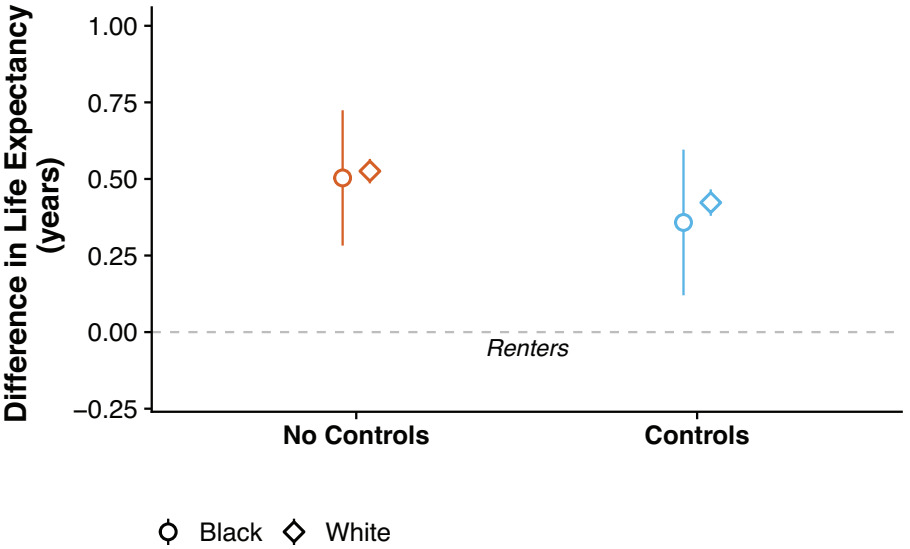

Fig. 5 The unadjusted difference in life expectancy between homeowners and renters for Black and White Americans in the CenSoc-DMF. Uncertainty bars show 95% confidence intervals; for White Americans, the uncertainty bars are smaller than the graph point size.

a broader representation of general environments and experiences compared with twins, they also share on average only half as many genes as identical twins (siblings and fraternal twins both share on average 50% of genes). This introduces the potential for genetic confounding. In other words, there could be genes associated with both homeownership and longevity that are not accounted for in the analysis using sibling fixed effects. Simply put, if the reason that one sibling owns a home and the other(s) does not is related to longevity, this presents a threat to any causal interpretation.

Results

I first analyze the association between homeownership and longevity using the full pooled sample ($N = 1.4$ million). I fit models described by Eqs. (1) and (3) on Black and White Americans separately. Figure 5 shows a clear mortality advantage for both Black and White homeowners. The unadjusted difference in life expectancy for Black Americans (0.50 years) and White Americans (0.53 years) is highly comparable. These regression estimates correspond to conservative estimates of the difference in life expectancy conditional on living to age 65 ($e65$). After controlling for educational attainment in years, race, wage and salary income, occupation, state of residence in 1940, urbanicity, and marital status, the difference in life expectancy is 0.36 years for Black Americans and 0.42 years for White Americans.

Next, I turn to the subsample of siblings identified from linkage to the 1920 census. I fit a model described by Eq. (4) on a pooled sample; I am unable to fit separate

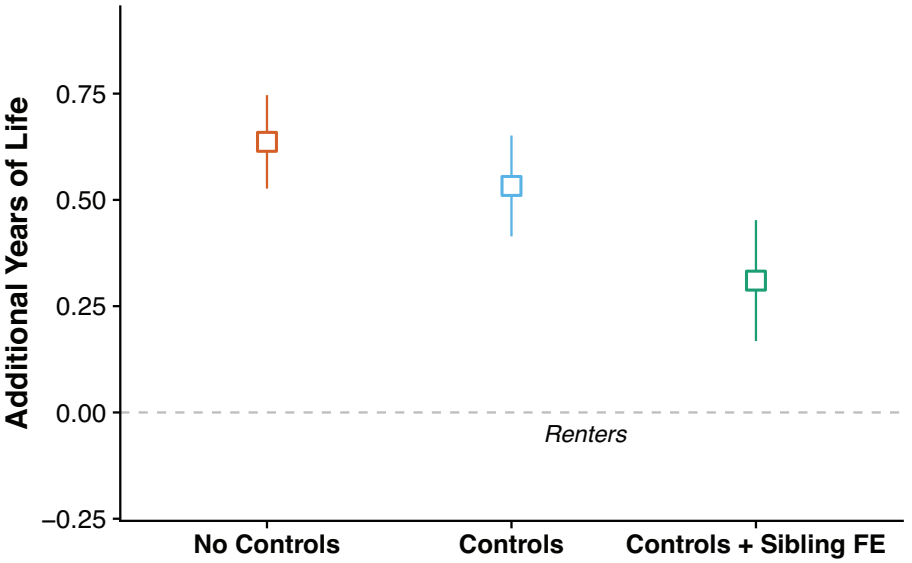

Fig. 6 The relationship between owning a home and longevity from three regression models for our sibling sample. The "no controls" model adjusts only for birth cohort. The "controls" model adjusts for educational attainment, race, occupation, birth cohort, marital status, state of residence in 1940, and urban–rural status. The "controls + sibling FE" model additionally includes sibling and birth order fixed effects. Uncertainty bars show 95% confidence intervals.

models for Black and White Americans separately owing to sample size limitations. Figure 6 shows a strong positive association between homeownership and longevity for the baseline model without controls. Owning a home in 1940 is associated with a mortality advantage of 0.64 years.[7] After adjusting for covariates (educational attainment in years, race, occupation, urbanicity, state of residence in 1940, and marital status), the association is slightly attenuated: the mortality advantage is 0.53 years. The final model, which includes sibling fixed effects to account for shared conditions in childhood such as family wealth, genetic endowment, and other hard-to-measure confounders, still shows a statistically significant mortality advantage of 0.31 years. The full regression tables for Figures 5 and 6 are presented in section A.3 (online appendix).

Throughout the article, I report estimates from an unweighted sample. As a robustness check, I also constructed individual-level statistical weights to align the marginal totals of the sample to the 1940 census population. The resulting estimates from the weighted sample are very close to the unweighted estimates; see section A.2 in the online appendix for details.

[7] The estimated unadjusted difference in life expectancy between homeowners and renters in the subsample of siblings (0.52, 95% CI = [0.48, 0.56]) is lower than in the full sample (0.64, 95% CI = [0.53, 0.75]), but the difference in the associations is not statistically significant. This suggests that the sibling subsample is not especially selected in a way that would bias the relationship between homeownership and longevity.

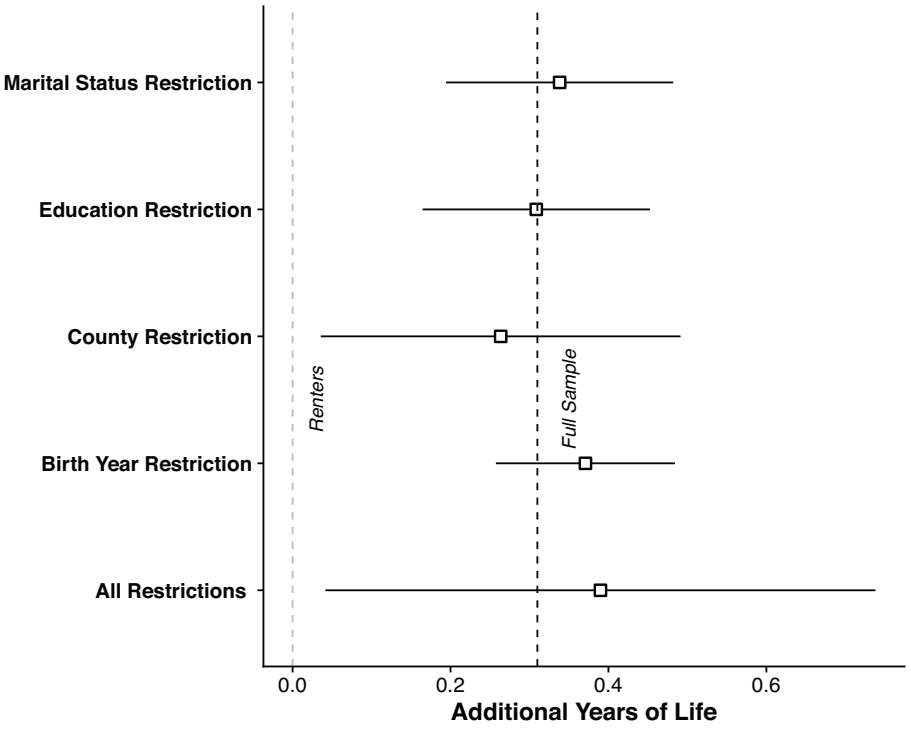

Fig. 7 Estimates of the effect of homeownership on longevity from refitting the sibling fixed-effect model on subsamples to account for potential within-sibling confounding. Estimates do not change meaningfully across subsamples. The vertical dashed line represents the estimate from the full sibling sample of 0.31 additional years of life.

Sample Restriction

To address potential concerns of residual confounding within siblings, I refit the sibling fixed-effect model on a series of different subsamples. The goal of this sensitivity analysis is to reduce potential residual confounding within siblings. For example, by restricting to siblings who are still living in the same county or have comparable educational attainment, we may account for unobserved heterogeneity, such as early-life health, between siblings. For this analysis, I create five different subsamples: (1) brothers who are both married; (2) brothers with ±2 years of educational attainment; (3) brothers living in the same county in 1940; (4) brothers born within 5 years of each other; and (5) a sample with all of the aforementioned restrictions. Figure 7 shows my key result that owning a home has a causal effect on longevity and is robust across all subsamples. I interpret this as evidence that the findings are unlikely to be driven by residual within-sibling confounding.

Does the Effect of Homeownership on Longevity Vary by Home Price?

In Figure 8, I examine whether more valuable homes have a stronger relationship with longevity than less valuable homes. I assign each home a quartile score based

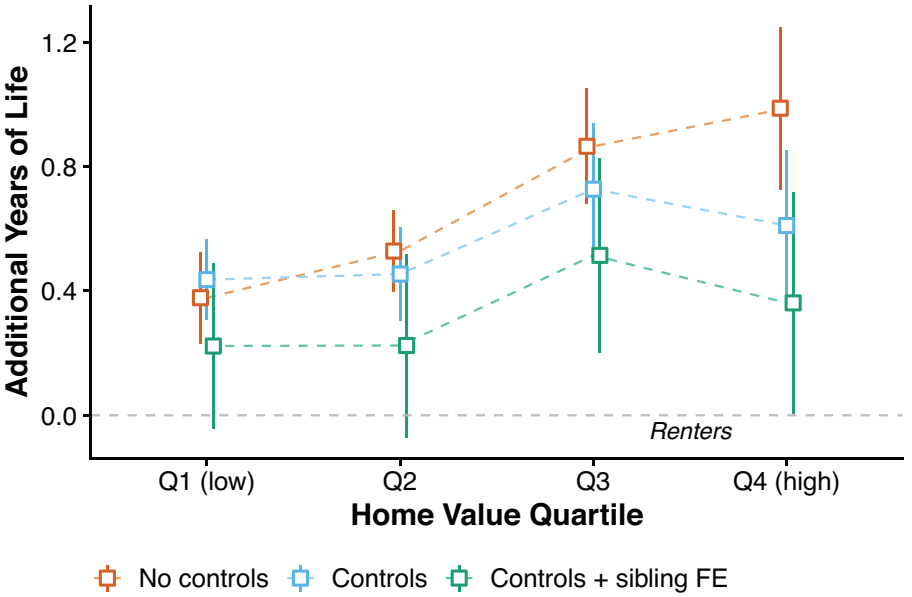

Fig. 8 The relationship between owning a home and longevity for different levels of home value in the sibling sample. Each home was categorized according to its value relative to other homes in the same state. Uncertainty bars show 95% confidence intervals.

on its value relative to other homes in the same state, as assessed in the 1940 census. I then incorporate these quartile scores as four dummy predictors in the models. In the model without controls, I observe a linear increase in the unadjusted difference in life expectancy between homeowners and renters as home value rises. This association becomes less prominent in the model with controls and sibling fixed effects, indicating that higher valued homes yield only a modest increase in life expectancy compared with lower valued homes. However, the large uncertainty bands preclude one from making any definitive claims about effect heterogeneity with respect to home value.

Addressing Double-Truncation

The regression models are fit on a left and right ("doubly") truncated window of deaths between 1975 and 2005. We observe each birth cohort dying during a different range of ages of death. For example, for the birth cohort of 1910, we see deaths only between the ages of 64 and 95. Fitting regression models on doubly truncated data can attenuate any estimated regression coefficients (Alexander 2018). To convert these regression estimates into a more interpretable metric—difference in life expectancy at age 65, $e(65)$—I fit a Gompertz proportional hazard model using maximum likelihood techniques (Goldstein et al. 2023), which explicitly accounts for double truncation. I estimate a difference in $e(65)$ between homeowners and renters of 0.74 years in the full sample, approximately 17% larger than the regression coefficient (0.64). While I cannot refit the fully specified sibling fixed-effects model because of

computational limitations (Goldstein et al. 2023), for interpretation I can approximately convert any reported regression-based estimate into a difference in $e(65)$ metric by multiplying the regression-based estimate by an adjustment factor of approximately 1.17.

Discussion

This study finds a meaningful, statistically significant difference in life expectancy between homeowners and renters. Those who own a home in early adulthood live approximately 6 months longer at age 65 than those who rent, and controlling for a large set of observable demographic and socioeconomic characteristics only slightly attenuates this estimate. These results align with expectations: homeowners are wealthier than renters, and wealth is almost universally associated with higher life expectancy.

In the second analysis, I use a sibling-based identification strategy, which partially controls for shared family environment and genetic endowment, to estimate the causal effect of owning a home on longevity. Owning a home in early adulthood has an effect of 0.31 additional years of life expectancy, equivalent to approximately one third the Black–White mortality gap observed in the sample. For further context, for other early twentieth-century birth cohorts, the causal impact of a college degree was estimated to be approximately 1 year of mortality advantage (Fletcher and Noghanibehambari 2021) and the causal impact of early-life exposure to lead to be 0.23 years of mortality disadvantage (Fletcher and Noghanibehambari 2023).

I interpret this as evidence that homeownership causes people to, on average, live meaningfully longer lives. This conclusion aligns closely with the theoretical framework that homeownership in early adulthood in the U.S. context will have compounded financial, social, and psychological advantages across the life course, culminating in a longer life. To give this estimate a causal interpretation requires making several assumptions, including that there is no residual confounding within sibling pairs (Boardman and Fletcher 2015). However, the robustness of the results and the theoretical framework support the conclusion that homeownership has a causal effect on longevity.

Despite huge disparities in homeownership rates between Black and White Americans, I find no significant Black–White differences in the relationship between homeownership and longevity.[8] This is a surprising finding, as the median value of homes in the sample for White Americans ($2,000) is four times that of Black Americans ($500), and other studies have found stratified racial and ethnic differences in both health (Finnigan 2014) and wealth-enhancing effects of homeownership (Killewald and Bryan 2016). Further, many observable social determinants of mortality, such as educational attainment (Card and Krueger 1992), have a weaker correlation with longevity for Black Americans than for White Americans.

[8] The sibling sample is not large enough to estimate a causal effect separately for Black and White Americans. However, it is plausible that the causal effects for Black and White Americans would be comparable given the similar unadjusted differences in life expectancy between homeowners and renters.

The puzzlingly similar results for Black and White Americans may be explained by the differential timing of homeownership. Black Americans who were able to purchase a home before 1940 may have been spared some of the exploitative real estate practices that arose in the following decades, such as racist exclusion from the housing market and predatory inclusion characterized by overpriced, older housing in Black neighborhoods with unfavorable or exploitative loan conditions (Taylor 2019). These policies and practices meant that many Black Americans did not benefit from homeownership to the same extent as White Americans as a result of a lack of investment in Black neighborhoods (Sugrue 2014). However, individuals who were able to purchase a home before 1940 may have been able to escape predatory inclusion practices that became more widespread in the following decades (Taylor 2019).

I observe a relatively weak, positive correlation between the value of a home and its impact on longevity. This, coupled with analysis indicating similar mortality advantages for both Black and White homeowners, despite White Americans having substantially more valuable homes, suggests that homeownership has an effect on longevity that goes beyond wealth. In other words, being a homeowner is on average beneficial for longevity, regardless of the value of the home.

Limitations

A number of important limitations and caveats to this analysis warrant discussion. Several methodological issues have been identified in the context of within-siblings designs (McGue et al. 2010). Most importantly, while the results of this study suggest a causal effect of homeownership on longevity, residual confounding within sibling pairs—unobserved differences between siblings not accounted for in the model—is a valid concern. For instance, the sibling who is more interested in long-term financial security might buy a home earlier in their life course, and interest in long-term financial security may also be a correlate of healthy lifestyle choices. There are also possible differences in overall personality, environmental exposures, genetic endowment, differential parental investment in children, and other hard-to-observe characteristics between siblings that may introduce additional confounding. While I cannot confirm that there is no residual confounding within siblings, the robustness checks are reassuring. Specifically, I reestimated the sibling fixed-effect models on different subsamples to address possible sources of unobserved heterogeneity between siblings. These subsample analyses give additional geographic and age-based specificity. For example, one subsample is confined to siblings residing in the same county in 1940, and another includes only those siblings born within five years of each other. I find no evidence that the findings are driven by residual within-sibling confounding.[9]

[9] Using a similar identification strategy and research design, Halpern-Manners et al. (2020) found evidence of a causal effect of education on longevity. To bolster their causal claim, they used simulation methods to demonstrate that the amount of residual confounding required to invalidate their causal claim would be extreme and unlikely. Further, they found no statistically significant difference between parallel estimates of the education–mortality relationship using fixed-effects models on samples of twins and nontwin siblings. This suggests that there is little remaining residual genetic confounding in siblings, at least in the case of education and mortality.

It is also important to note that this study focused only on male household heads, thus excluding women, lodgers, and men living with their parents. In particular, investigating the impact of homeownership on longevity for women is a crucial avenue for future research.

My linked samples also overrepresent White men with higher socioeconomic status and underrepresent Black men and men from the South. While my regression models can adjust for socioeconomic status, the small resulting linked sample of Black American siblings makes fitting race-stratified sibling fixed-effects models infeasible.

In this study, I considered the relationship between homeownership and longevity only in the U.S. context. This relationship may differ in other countries with different levels of public housing, homeownership rates, and social conditions regarding both homeownership and health. For example, Vienna has a high level of public housing (Kadi 2015), and Singapore's homeownership rates are over 90% owing to heavily subsidized housing (Phang and Helble 2016). Given the significant differences in rates and societal norms surrounding homeownership, my results speak definitively only about the U.S. context.

Because I observed homeownership status at a single point in time between the ages of 24 and 35, some renters in the sample will eventually become homeowners. The vast majority of homeowners will likely remain homeowners: only 6% of household-head homeowners became renters over a 40-year observation period between 1968 and 2009 (Sharp and Hall 2014). In this sense, my estimates of the causal impact of homeownership may be somewhat conservative in nature, because the group of renters has some eventual homeowners who will likely have lower mortality than permanent renters. If I were to compare permanent renters with permanent homeowners, I would likely see a slightly larger effect size. There is also some potential that transition in and out of homeownership may impact Black–White differentials, especially given legislation such as the G.I. Bill, passed in 1944, which in effect privileged White access to mortgage loans (McKenna 2008). The specific implications of this discrimination are an important topic for future research.

The causal relationship between homeownership and life expectancy may also be intertwined with location choices. My model, employing a sibling comparison within the same county, addresses some potential confounders, but I acknowledge the need for further research to disentangle how joint decisions on location and whether to rent or buy might impact life expectancy, considering factors such as community stability and socioeconomic status.

As with all historical record linkage efforts, there is the potential for false matches in the linked sample. In the case of the exact-match ABE linkage process applied between the 1920 and 1940 census records, other comparable intercensus linkage efforts have found a false match rate of approximately 10% (Abramitzky et al. 2021). For the CenSoc-DMF link between the 1940 census and the DMF, there is currently no exact estimate of the false match rate. However, approximately 15% of individuals have discordant middle initials, a field not used for linkage (Breen et al. 2023). This could be interpreted as an upper bound on the number of false matches: because there were potential transcription errors, a mismatch of middle initial does not guarantee a false match. In a regression setting, false matches will likely downwardly bias

any estimated coefficient (Bailey et al. 2020); therefore, false matches may lead my estimates of the relationship between homeownership and longevity to be slightly conservative.

Conclusions

Since 1940, the dynamics of homeownership have undergone substantial transformation. Overall homeownership rates have climbed, notably almost doubling from 1940 to 1980 (Chevan 1989). This expansion can be attributed to a combination of factors: progressive post–World War II housing policies, economic expansion and demographic shifts in the population, and a boost in household incomes due to a higher number of women entering the workforce, which collectively enhanced the accessibility of homeownership. After 1980, percentage homeownership rates hovered in the mid to high 60s, with recent estimates indicating that approximately 40% of Americans younger than 35 owned homes (U.S. Census Bureau 2024). The racial disparity in homeownership rates has narrowed slightly over time, but the absolute gap between Black Americans and non-Hispanic White Americans is still nearly 30 percentage points: in 2023, 74.5% of non-Hispanic White Americans owned homes, while only 45.7% of Black Americans owned homes.

There is reason to believe the relative benefit of homeownership for Black and White Americans may have diverged since the period considered in this study. In particular, "predatory inclusions"—the expansion of homeownership under unfair, exploitative, or predatory terms—especially targeted Black Americans (Taylor 2019). Such practices became especially codified and prominent after 1940. Black and Latino borrowers in the United States still disproportionately receive high-cost and higher risk mortgages (Agarwal and Evanoff 2013; Steil et al. 2018). Black Americans were also more likely to have purchased houses during real estate bubbles, meaning that they were hit harder than other groups by the housing crisis of 2008 (Urban Institute 2020). Further, institutional investors in single-family rentals have a growing presence, and their activities can weaken local homeownership, especially for Black Americans (An 2024). Given higher interest rates and fees, lower quality of housing, continued redlining, and more frequent foreclosures, the longevity benefits conferred to homeowners today is likely smaller for Black Americans than for White Americans.

Young adults in both the United States (Choi, Zhu, Goodman et al. 2018; Xu et al. 2015) and abroad (Tocchioni et al. 2021; Yukutake and Moriizumi 2018) have also experienced delayed entry into homeownership. The average age of first-time U.S. homeowners rose from 30 to 35 over the course of a little more than a decade (Lautz 2011; National Association of Realtors 2022). Delays in education completion, career instability, and student loan burdens (Mezza et al. 2020) are considered major drivers of delayed homeownership (Choi, Zhu, Goodman et al. 2018). Entry into homeownership is also shaped by financial assistance from parents (Choi, Zhu and Goodman 2018; Lee and Mezzanotti 2017). In sum, the path to homeownership for young adults is increasingly influenced by socioeconomic privilege and financial opportunity.

In the current setting, the mechanisms driving homeownership's effect on longevity have largely remained consistent, yet their relative impact has likely evolved. Health

risks associated with substandard rental housing still exist (Dodson et al. 2017). However, these health risks have been mitigated by an increased awareness and stricter regulation of environmental hazards, such as lead-based paint, leading to safer living conditions (McFarland et al. 2022). In terms of wealth accumulation, homeownership has taken on a more pronounced role, partly as a result of significant tax incentives for homeowners, which have made property ownership not only a residential choice but also a potentially financially strategic one. The economic benefits of homeownership have become more salient over time, yet the benefits have not accrued evenly: recent evidence suggests that the entirety of the median Black–White wealth gap can be explained by housing market appreciation (LaBriola 2021). The social and psychological benefits are likely equally important in the contemporary context. Homeownership continues to be associated with larger social networks and greater access to social support (Eliason et al. 2015), and larger social networks continue to play a key role in shaping mortality outcomes (Czaja et al. 2021; Schutter et al. 2022). Further, homeownership continues to have psychological benefits, giving owners a sense of emotional security in their lives (Elsinga et al. 2007). Whether and how the psychological benefits of homeownership have changed over time remains an important open question for future research. All of these factors in combination suggest that homeownership persists as a key determinant of health in the United States.

There are many promising avenues for future research. First, I was able to observe homeownership only in early adulthood, and future work could consider longitudinally tracking entrance and exit from homeownership over the life course. Second, while my theoretical framework suggests various potential causal pathways between homeownership and longevity, an examination of the contribution of each plausible causal mechanism is a promising area of research. Finally, future work could consider studying different periods, cohorts, or population subgroups to investigate the extent to which the results of my study generalize to other contexts. In particular, a study of contemporary housing and mortality would be especially relevant to the dialogue surrounding housing policy today. These are important avenues of future research that will deepen our understanding of the relationship between homeownership and longevity.

Despite the mentioned limitations, this study offers compelling evidence that owning a home in early adulthood has a causal effect on later-life longevity. This finding aligns with my theoretical framework that owning a home promotes longevity and health more broadly through a combination of stronger social networks, wealth accumulation, lower health risks due to substandard housing, and improved psychological well-being. My results speak to the need for greater equity in the opportunities, incentives, and costs of homeownership. Policies that responsibly and equitably expand homeownership opportunities for Black Americans could bring substantial longevity benefits. ■

Acknowledgments For helpful feedback and background information, the author would like to thank Will Dow, Dennis M. Feehan, Jason Fletcher, Joshua R. Goldstein, Nick Graetz, Ron Lee, Ian Lundberg, Patricia A. McManus, Christopher Muller, Michelle Neimann, members of the CenSoc Working Group, participants in the session "Socioeconomic Inequalities in Health, Life Expectancy, and Mortality" at the 2022 annual meeting of the Population Association of America, participants of the Florida State Center for Demography

and Public Health seminar, and participants at the 2023 IPUMS Data-Intensive Research Conference. The author acknowledges financial support from the National Institute of Aging grants R01AG058940 and R01AG076830. C.F.B. was supported by National Institute of Aging T32-AG000246. Replication code is available from doi.org/10.17605/OSF.IO/G85SV.

References

Aaronson, D., Hartley, D., Mazumder, B., & Stinson, M. (2023). The long-run effects of the 1930s redlining maps on children. *Journal of Economic Literature, 61,* 846–862.

Abramitzky, R., Boustan, L., Eriksson, K., Feigenbaum, J., & Pérez, S. (2021). Automated linking of historical data. *Journal of Economic Literature, 59,* 865–918.

Abramitzky, R., Boustan, L., Eriksson, K., Pérez, S., & Rashid, M. (2020). *Census Linking Project: Version 1.0* [Dataset]. Available from https://censuslinkingproject.org

Abramitzky, R., Boustan, L. P., & Eriksson, K. (2012). Europe's tired, poor, huddled masses: Self-selection and economic outcomes in the age of mass migration. *American Economic Review, 102,* 1832–1856.

Abramitzky, R., Boustan, L. P., & Eriksson, K. (2014). A nation of immigrants: Assimilation and economic outcomes in the age of mass migration. *Journal of Political Economy, 122,* 467–506.

Acharya, B., Bhatta, D., & Dhakal, C. (2022). The risk of eviction and the mental health outcomes among the U.S. adults. *Preventive Medicine Reports, 29,* 101981. https://doi.org/10.1016/j.pmedr.2022.101981

Agarwal, S., & Evanoff, D. D. (2013). *Loan product steering in mortgage market* (SSRN research paper series). https://dx.doi.org/10.2139/ssrn.2204400

Ager, P., Feigenbaum, J. J., Hansen, C. W., & Tan, H. R. (2024). How the other half died: Immigration and mortality in U.S. cities. *Review of Economic Studies, 91,* 1–44.

Alexander, M. (2018). *Deaths without denominators: Using a matched dataset to study mortality patterns in the United States* (SocArXiv preprint papers). https://doi.org/10.31235/osf.io/q79ye

An, B. Y. (2024). The influence of institutional single-family rental investors on homeownership: Who gets targeted and pushed out of the local market? *Journal of Planning Education and Research, 44,* 2231–2250.

Apgar, W. C., & Di, Z. X. (2006). Housing wealth and retirement savings. In G. L. Clark, A. H. Munnell, & J. M. Orszag (Eds.), *The Oxford handbook of pensions and retirement income* (pp. 618–637). Oxford, UK: Oxford University Press.

Bailey, M., Cole, C., Henderson, M., & Massey, C. (2020). How well do automated linking methods perform? Lessons from U.S. historical data. *Journal of Economic Literature, 58,* 997–1044.

Berkman, L. F., Leo-Summers, L., & Horwitz, R. I. (1992). Emotional support and survival after myocardial infarction. A prospective, population-based study of the elderly. *Annals of Internal Medicine, 117,* 1003–1009.

Berkman, L. F., & Syme, S. L. (1979). Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. *American Journal of Epidemiology, 109,* 186–204.

Boardman, J. D., & Fletcher, J. M. (2015). To cause or not to cause? That is the question, but identical twins might not have all of the answers. *Social Science & Medicine, 127,* 198–200.

Boehm, T. P., & Schlottmann, A. (2008). Wealth accumulation and homeownership: Evidence for low-income households. *Cityscape, 10*(2), 225–256.

Boustan, L. P. (2017). *Competition in the promised land: Black migrants in northern cities and labor markets*. Princeton, NJ: Princeton University Press.

Breen, C., & Osborne, M. (2022). An assessment of CenSoc match quality (SocArXiv preprint papers). https://doi.org/10.31235/osf.io/bj5md

Breen, C. F., Osborne, M., & Goldstein, J. R. (2023). CenSoc: Public linked administrative mortality records for individual-level research. *Scientific Data, 10,* 802. https://doi.org/10.1038/s41597-023-02713-y

Card, D., & Krueger, A. B. (1992). School quality and Black–White relative earnings: A direct assessment. *Quarterly Journal of Economics, 107,* 151–200.

Chetty, R., & Hendren, N. (2018). The impacts of neighborhoods on intergenerational mobility I: Childhood exposure effects. *Quarterly Journal of Economics, 133,* 1107–1162.

Chevan, A. (1989). The growth of home ownership: 1940–1980. *Demography, 26,* 249–266.
Chivers, W. R. (1949). *The Negro Ghetto* By Robert C. Weaver. New York: Harcourt, Brace and Company, 1948. 404 pp. $3.75. *Social Forces, 27,* 328.
Choi, J. H., Zhu, J., & Goodman, L. (2018, August 2). *Is homeownership inherited? A tale of three millennials*. Urban Institute. Retrieved from https://www.urban.org/urban-wire/homeownership-inherited-tale-three-millennials
Choi, J. H., Zhu, J., Goodman, L., Ganesh, B., & Strochak, S. (2018). *Millennial homeownership: Why is it so low, and how can we increase it?* (Research report). Urban Institute. Retrieved from https://www.urban.org/research/publication/millennial-homeownership
Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38,* 300–314.
Collins, W. J., & Margo, R. A. (2011). Race and home ownership from the end of the Civil War to the present. *American Economic Review: Papers & Proceedings, 101,* 355–359.
Conley, D., Pfeiffer, K. M., & Velez, M. (2007). Explaining sibling differences in achievement and behavioral outcomes: The importance of within- and between-family factors. *Social Science Research, 36,* 1087–1104.
Currie, J., & Thomas, D. (1995). Does Head Start make a difference? *American Economic Review, 85,* 341–364.
Czaja, S. J., Moxley, J. H., & Rogers, W. A. (2021). Social support, isolation, loneliness, and health among older adults in the PRISM randomized controlled trial. *Frontiers in Psychology, 12,* 728658. https://doi.org/10.3389/fpsyg.2021.728658
Davis, E., & Fine-Davis, M. (1981). Predictors of satisfaction with housing and neighbourhood: A nationwide study in the Republic of Ireland. *Social Indicators Research, 9,* 477–494.
Davis, R. L. F. (1992). Review: "*Freedom: A Documentary History of Emancipation, 1861–1867. Selected From the Holdings of the National Archives of the United States. Series I. Volume III: The Wartime Genesis of Free Labor: The Lower South*" by Ira Berlin. *Journal of Southern History, 58,* 725–727.
Di, Z. X., Belsky, E., & Liu, X. (2007). Do homeowners achieve more household wealth in the long run? *Journal of Housing Economics, 16,* 274–290.
Dietz, R. D., & Haurin, D. R. (2003). The social and private micro-level consequences of homeownership. *Journal of Urban Economics, 54,* 401–450.
DiPrete, T. A., & Eirich, G. M. (2006). Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments. *Annual Review of Sociology, 32,* 271–297.
Dodson, R. E., Udesky, J. O., Colton, M. D., McCauley, M., Camann, D. E., Yau, A. Y., . . . Rudel, R. A. (2017). Chemical exposures in recently renovated low-income housing: Influence of building materials and occupant activities. *Environment International, 109,* 114–127.
Eliason, S. R., Mortimer, J. T., & Vuolo, M. (2015). The transition to adulthood: Life course structures and subjective perceptions. *Social Psychology Quarterly, 78,* 205–227.
Elsinga, M., De Decker, P., Teller, N., & Toussaint, J. (Eds.). (2007). *Housing and urban policy studies: Vol. 32. Home ownership beyond asset and security: Perceptions of housing related security and insecurity in eight European countries*. Amsterdam, the Netherlands: IOS Press.
Feigenbaum, J. J., Hoehn-Velasco, L., Muller, C., & Wrigley-Field, E. (2022). 1918 every year: Racial inequality in infectious mortality, 1906–1942. *AEA Papers and Proceedings, 112,* 199–204.
Finnigan, R. (2014). Racial and ethnic stratification in the relationship between homeownership and self-rated health. *Social Science & Medicine, 115,* 72–81.
Fishback, P. V., Rose, J., Snowden, K. A., & Storrs, T. (2021). *New evidence on redlining by federal housing programs in the 1930s* (NBER Working Paper 29244). Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w29244
Fletcher, J., & Noghanibehambari, H. (2021). *The effects of education on mortality: Evidence using college expansions* (NBER Working Paper 29423). Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w29423
Fletcher, J., & Noghanibehambari, H. (2023). *Toxified to the bone: Early-life and childhood exposure to lead and men's old-age mortality* (NBER Working Paper 31957). Cambridge, MA: National Bureau of Economic Research. https://doi.org/10.3386/w31957
Galster, G. C. (1983). Empirical evidence on cross-tenure differences in home maintenance and conditions. *Land Economics, 59,* 107–113.
Goeken, R., Huynh, L., Lenius, T., & Vick, R. (2011). New methods of census record linking. *Historical Methods, 44,* 7–14.

Goldstein, J. R., Alexander, M., Breen, C., González, A. M., Menares, F., Osborne, M., . . . Yildirim, U. (2021). *CenSoc Mortality File: Version 2.0* [Dataset]. Berkeley: University of California. Retrieved from https://censoc-download.demog.berkeley.edu/

Goldstein, J. R., Osborne, M., Atherwood, S., & Breen, C. F. (2023). Mortality modeling of partially observed cohorts using administrative death records. *Population Research and Policy Review, 42,* 36. https://doi.org/10.1007/s11113-023-09785-z

Graetz, N., & Esposito, M. (2023). Historical redlining and contemporary racial disparities in neighborhood life expectancy. *Social Forces, 102,* 1–22.

Halpern-Manners, A., Helgertz, J., Warren, J. R., & Roberts, E. (2020). The effects of education on mortality: Evidence from linked U.S. Census and administrative mortality data. *Demography, 57,* 1513–1541.

Harding, J. P., Rosenthal, S. S., & Sirmans, C. F. (2007). Depreciation of housing capital, maintenance, and house price inflation: Estimates from a repeat sales model. *Journal of Urban Economics, 61,* 193–217.

Haurin, D., Parcel, T. L., & Haurin, R. J. (2002). Does homeownership affect child outcomes? *Real Estate Economics, 30,* 635–666.

Herbert, C. E., McCue, D. T., & Sanchez-Moyano, R. (2013). *Is homeownership still an effective means of building wealth for low-income and minority households? (Was it ever?)* (Report No. HBTL-06). Cambridge, MA: Harvard University, Joint Center for Housing Studies. Retrieved from https://www.jchs.harvard.edu/sites/default/files/hbtl-06.pdf

Hill, M. E., & Rosenwaike, I. (2001). The Social Security Administration's Death Master File: The completeness of death reporting at older ages. *Social Security Bulletin, 64*(1), 45–51.

Imbens, G. W., & Rubin, D. B. (2015). *Causal inference for statistics, social, and biomedical sciences: An introduction*. Cambridge, MA: Cambridge University Press.

Kadi, J. (2015). Recommodifying housing in formerly "red" Vienna? *Housing, Theory and Society, 32,* 247–265.

Kearns, A., Hiscock, R., Ellaway, A., & MaCintyre, S. (2000). 'Beyond four walls.' The psycho-social benefits of home: Evidence from West Central Scotland. *Housing Studies, 15,* 387–410.

Killewald, A., & Bryan, B. (2016). Does your home make you wealthy? *Russell Sage Foundation Journal of the Social Sciences, 2*(6), 110–128.

Krieger, J., & Higgins, D. L. (2002). Housing and health: Time again for public health action. *American Journal of Public Health, 92,* 758–768.

Laaksonen, M., Tarkiainen. L., & Martikainen, P. (2009). Housing wealth and mortality: A register linkage study of the Finnish population. *Social Science & Medicine, 69,* 754–760.

LaBriola, J. (2021). *Housing market appreciation and the White–Black wealth gap* (SocArXiv preprint papers). https://doi.org/10.31235/osf.io/rp3ed

Lautz, J. (2011, March 7). *Median age of home buyers: 2001–2010*. National Association of Realtors. Retrieved from https://www.nar.realtor/blogs/economists-outlook/median-age-of-home-buyers-2001-2010

Lee, J., & Mezzanotti, F. (2017). *Bank distress and manufacturing: Evidence from the Great Depression* (Working paper). Evanston, IL: Northwestern University, Kellogg School of Management. Retrieved from https://www.kellogg.northwestern.edu/faculty/mezzanotti/documents/lee_mezzanotti_greatdepression.pdf

Lundberg, I., Johnson, R., & Stewart, B. M. (2021). What is your estimand? Defining the target quantity connects statistical evidence to theory. *American Sociological Review, 86,* 532–565.

Manturuk, K., Lindblad, M., & Quercia, R. (2010). Friends and neighbors: Homeownership and social capital among low- to moderate-income families. *Journal of Urban Affairs, 32,* 471–488.

Manturuk, K. R. (2012). Urban homeownership and mental health: Mediating effect of perceived sense of control. *City & Community, 11,* 409–430.

Margo, R. A. (1993). Employment and unemployment in the 1930s. *Journal of Economic Perspectives, 7*(2), 41–59.

McFarland, M. J., Hauer, M. E., & Reuben, A. (2022). Half of U.S. population exposed to adverse lead levels in early childhood. *Proceedings of the National Academy of Sciences, 119,* e2118631119. https://doi.org/10.1073/pnas.2118631119

McGue, M., Osler, M., & Christensen, K. (2010). Causal inference and observational research: The utility of twins. *Perspectives on Psychological Science, 5,* 546–556.

McKenna, C. (2008). *The homeownership gap: How the post-World War II GI Bill shaped modern day homeownership patterns for Black and White Americans* (Master's thesis). Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge, MA. Retrieved from https://dspace.mit.edu/bitstream/handle/1721.1/44333/276173994-MIT.pdf?sequence=2&isAllowed=y

Mezza, A., Ringo, D., Sherlund, S., & Sommer, K. (2020). Student loans and homeownership. *Journal of Labor Economics, 38,* 215–260.

Michney, T. M., & Winling, L. (2020). New perspectives on New Deal housing policy: Explicating and mapping HOLC loans to African Americans. *Journal of Urban History, 46,* 150–180.

Munford, L. A., Fichera, E., & Sutton, M. (2020). Is owning your home good for your health? Evidence from exogenous variations in subsidies in England. *Economics & Human Biology, 39,* 100903. https://doi.org/10.1016/j.ehb.2020.100903

National Association of Realtors. (2022, November 3). *NAR finds share of first-time home buyers smaller, older than ever before*. Retrieved from https://web.archive.org/web/20240111044543/https://www.nar.realtor/newsroom/nar-finds-share-of-first-time-home-buyers-smaller-older-than-ever-before.

Phang, S. Y., & Helble, M. C. (2016). *Housing policies in Singapore* (ADBI Working Paper Series, No. 559). Asian Development Bank Institute. Retrieved from https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2753487_code1444574.pdf?abstractid=2753487&mirid=1&type=2

Rakoff, R. M. (1977). Ideology in everyday life: The meaning of the house. *Politics & Society, 7,* 85–104.

Rohe, W. M., & Stegman, M. A. (1994). The impact of home ownership on the social and political involvement of low-income people. *Urban Affairs Quarterly, 30,* 152–172.

Rohe, W. M., & Stewart, L. S. (1996). Homeownership and neighborhood stability. *Housing Policy Debate, 7,* 37–81.

Rolfe, S., Garnham, L., Godwin, J., Anderson, I., Seaman, P., & Donaldson, C. (2020). Housing as a social determinant of health and wellbeing: Developing an empirically-informed realist theoretical framework. *BMC Public Health, 20,* 1138. https://doi.org/10.1186/s12889-020-09224-0

Rossi, P. H., & Weber, E. (1996). The social benefits of homeownership: Empirical evidence from national surveys. *Housing Policy Debate, 7,* 1–35.

Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. New York, NY: Liveright Publishing.

Ruggles, S., Fitch, C. A., & Roberts, E. (2018). Historical census record linkage. *Annual Review of Sociology, 44,* 19–37.

Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M. (2020). *IPUMS USA: Version 10.0* [Dataset]. Minneapolis, MN: IPUMS. https://doi.org/10.18128/d010.v10.0

Samuel, L. R. (2012). *The American dream: A cultural history*. Syracuse, NY: Syracuse University Press.

Schutter, N., Holwerda, T. J., Comijs, H. C., Stek, M. L., Peen, J., & Dekker, J. J. M. (2022). Loneliness, social network size and mortality in older adults: A meta-analysis. *European Journal of Ageing, 19,* 1057–1076.

Sharp, G., & Hall, M. (2014). Emerging forms of racial inequality in homeownership exit, 1968–2009. *Social Problems, 61,* 427–447.

Smith, K. P., & Christakis, N. A. (2008). Social networks and health. *Annual Review of Sociology, 34,* 405–429.

Steil, J. P., Albright, L., Rugh, J. S., & Massey, D. S. (2018). The social structure of mortgage discrimination. *Housing Studies, 33,* 759–776.

Sugrue, T. J. (2014). *The origins of the urban crisis: Race and inequality in postwar Detroit* (Updated ed.). Princeton, NJ: Princeton University Press.

Taylor, K.-Y. (2019). *Race for profit: How banks and the real estate industry undermined Black homeownership*. Chapel Hill: University of North Carolina Press.

Tocchioni, V., Berrington, A., Vignoli, D., & Vitali, A. (2021). The changing association between homeownership and the transition to parenthood. *Demography, 58,* 1843–1865. https://doi.org/10.1215/00703370-9420322

Tremblay, K. R., Jr., & Dillman, D. A. (1983). *Beyond the American housing dream: Accommodation to the 1980s*. Lanham, MD: University Press of America.

Turner, T., & Luea, H. (2009). Homeownership, wealth accumulation and income status. *Journal of Housing Economics, 18,* 104–114.

Urban Institute. (2020, July 21). *An interactive view of the housing boom and bust*. Retrieved from https://apps.urban.org/features/mortgages-by-race/

U.S. Census Bureau. (2024, October 29). *Homeownership rate in the United States* (RSAHORUSQ156S). Retrieved from https://fred.stlouisfed.org/series/rsahorusq156s

Wandersman, A. (1981). A framework of participation in community organizations. *Journal of Applied Behavioral Science, 17,* 27–58.

Xu, Y., Johnson, C., Bartholomae, S., O'Neill, B., & Gutter, M. S. (2015). Homeownership among millennials: The deferred American dream? *Family and Consumer Sciences Research Journal, 44,* 201–212.

Yukutake, N., & Moriizumi, Y. (2018). Credit constraints and the delay of homeownership by young households in Japan. *International Journal of Housing Markets and Analysis, 13,* 56–76.

Casey F. Breen
casey.breen@demography.ox.ac.uk

Leverhulme Centre for Demographic Science, University of Oxford, Oxford, UK; https://orcid.org/0000-0003-3702-4746

Online Appendix

The Longevity Benefits of Homeownership: Evidence from Early 20th-Century U.S. Male Birth Cohorts

Casey F. Breen

A Supplemental Analyses

A.1 Record Linkage: ABE Conservative

For our primary analysis, we use the standard ABE exact match record linkage algorithm to link together the 1920 Census, 1940 Census, and the DMF mortality records. As a robustness check, we reconstruct our sibling sample using the conservative variant of the ABE exact record linkage algorithm, which restricts to matches where first and last names are unique within a ±2 year window (Abramitzky et al., 2021). Approximately 50% of our matches were deemed conservative for both the 1920–1940 linkage and the 1940 to DMF linkage (N = 39,629). We then refit our regression models on our sibling sample, finding our results are qualitatively similar, but with higher uncertainty due to the smaller sample sizes.

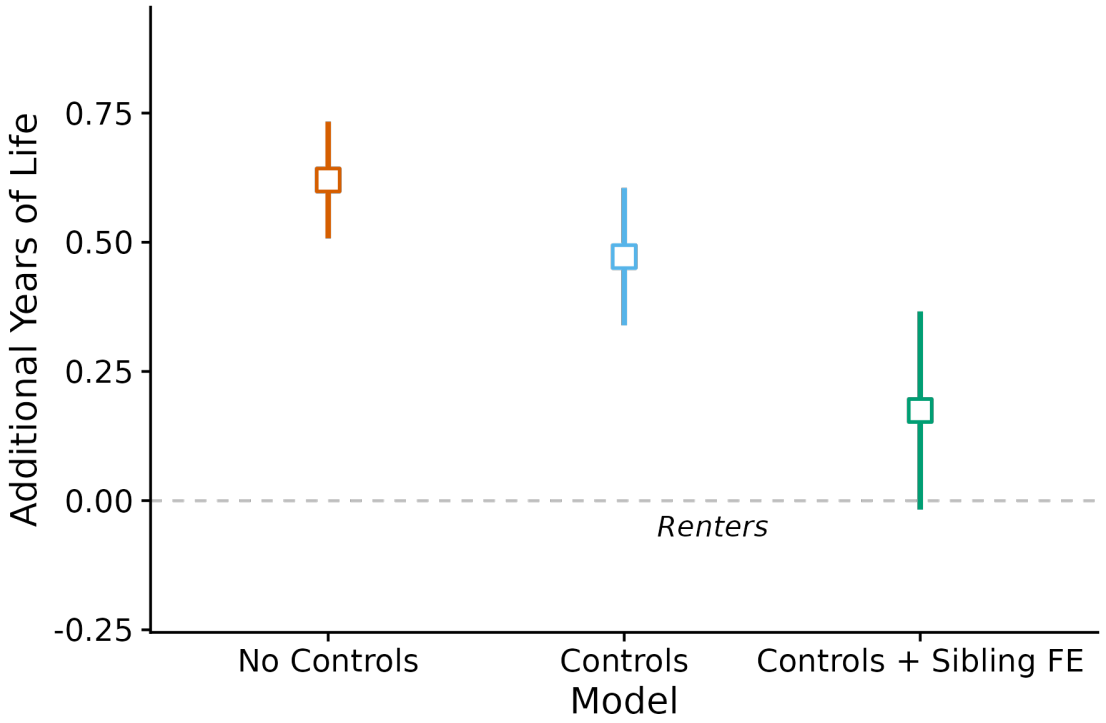

Figure A1: We refit our main models using a subsample of matches established with the ABE-Exact conservative algorithm for both the linkage between censuses and between censuses and mortality records.

A.2 Sample Representativeness

	1940 Census		CenSoc-DMF		CenSoc-DMF Sibs	
	N	%	*N*	%	*N*	%
Educational Attainment						
<High School	4,951,782	67.3	608,639	64.7	56,591	66.6
High School or some college	1,783,203	24.3	247,103	26.3	22,176	26.1
Bachelors Degree	339,072	4.6	48,024	5.1	3,504	4.1
Advanced Degree	162,122	2.2	24559	2.6	1,673	2.0
Not Available	117,086	1.6	12,091	1.3	1,001	1.2
Race						
Black	656,027	8.9	34,159	3.6	1,020	1.2
Other	27,778	0.4	3,296	0.4	97	0.1
White	6,669,460	90.7	902,961	96.0	83,828	98.7
Marital Status						
Married	7,013,184	95.4	905,924	96.3	82,444	97.1
Not married	340,081	4.6	34,492	3.7	2,501	2.9
Home Ownership						
Homeowner in 1940	1,780,906	24.2	249,379	26.5	24,032	28.3
Not Homeowner in 1940	5,572,359	75.8	691,037	73.5	60,913	71.7
Socioeconomic Status						
Sei 1-9	1,293,523	17.6	138,209	14.7	12,966	15.3
Sei 10-14	1,170,543	15.9	149,673	15.9	16,924	19.9
Sei 15-25	1,862,967	25.3	246,484	26.2	22,004	25.9
Sei 26+	2,776,321	37.8	380,226	40.4	30,969	36.5
Not Available	249,911	3.4	25,824	2.7	2,082	2.5
Rural						
Rural	3,183,160	43.3	397,739	42.3	43,320	51.0
Urban	4,170,105	56.7	542,677	57.7	41,625	49.0
Region String						
East North Central Div.	1,485,519	20.2	235,080	25.0	24,224	28.5
East South Central Div.	629,263	8.6	51,407	5.5	3,670	4.3
Middle Atlantic Division	1,420,842	19.3	193,013	20.5	13,734	16.2
Mountain Division	257,901	3.5	33,581	3.6	3,773	4.4
New England Division	396,893	5.4	54,448	5.8	4,093	4.8
Pacific Division	618,800	8.4	88,569	9.4	7,871	9.3
South Atlantic Division	1,004,976	13.7	82,833	8.8	6,028	7.1
West North Central Div.	724,762	9.9	118,185	12.6	14,957	17.6
West South Central Div.	814,309	11.1	83,300	8.9	6,595	7.8
Total	7,353,265	100	940,416	100	84,945	100

Table A1: Representativeness of our analytic samples. The first two columns report the sociodemographic composition of all men between the ages of 24-35 in the 1940 Census. The third and fourth columns report the sociodemographic composition of men age 24-35 in the 1940 Census who were successfully matched to a mortality record in the DMF. Finally, the fifth and sixth columns report the sociodemographic composition of our subsample of brothers.

As shown in Table A1, our sample is slightly upwardly biased in terms of socioeconomic status. As an additional robustness check, we construct person-level statistical weights to reweight our sample to the population totals in the complete-count 1940 Census. Specifically, we construct person-level weights representing the pseudo-probability of inclusion using proportional iterative fitting ('raking') (Mercer, Lau and Kennedy, 2018). We implemented the raking procedure using the R Package Autumn (Rudkin, 2024). We weight to 1940 Census totals on education level, urban/rural, racial classification, a socioeconomic index score based on occupation, marital status, region of residence, and homeownership status. We note that we would ideally be weighting to the population observed in the 1940 Census who died during our window of 1975-2005. However, it should be reasonably close, and the weighted estimates are very close.

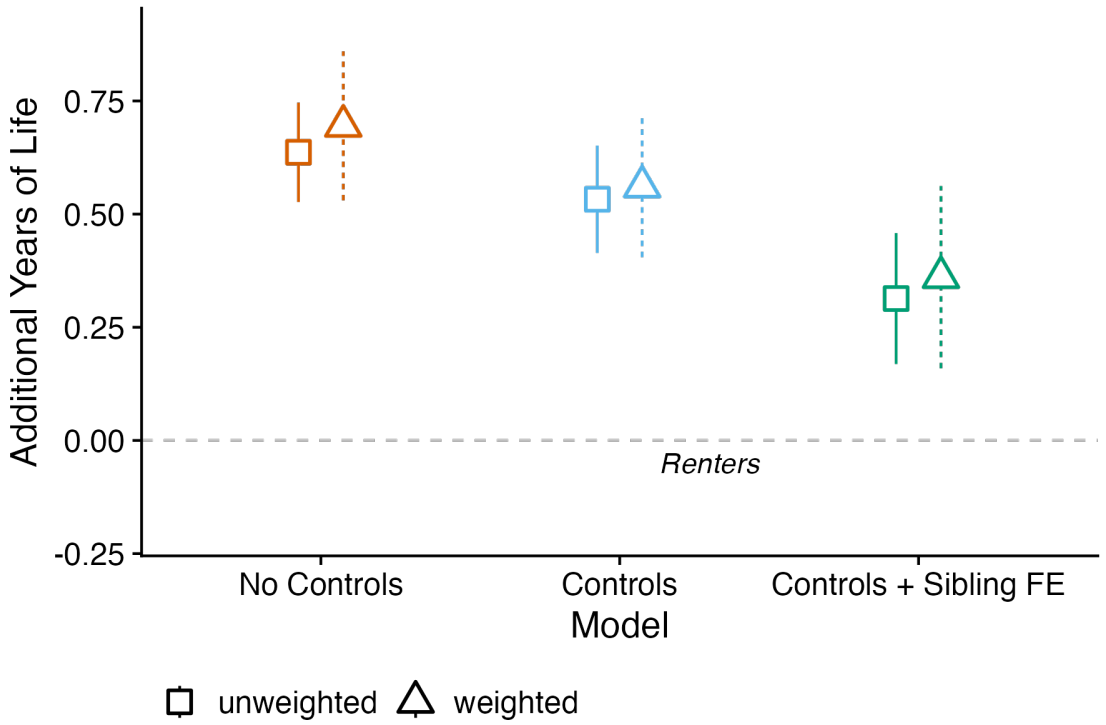

Figure A2: Models fit with and without individual-level weights.

A.3 Regression Tables

As a companion to the coefficient plots presented in the main body of the paper, we present the full regression coefficient tables for Figure 5, Figure 6, and Figure 8.

Dependent Variable:	Death Age			
Model:	White	White (Controls)	Black	Black (Controls)
Homeowner	0.5255**	0.4228**	0.5033**	0.3580*
	(0.0204)	(0.0220)	(0.1127)	(0.1213)
Education (Years)		0.1460**		0.0541**
		(0.0099)		(0.0087)
Urban		-0.2109**		-0.1003
		(0.0179)		(0.0868)
Fixed-effects				
Birth Year	Yes	Yes	Yes	Yes
Occupation		Yes		Yes
Marital Status		Yes		Yes
State (1940)		Yes		Yes
Observations	1,296,830	1,296,830	65,053	65,053
R^2	0.03857	0.04780	0.04829	0.05542
Within R^2	0.00083	0.00270	0.00043	0.00062

Clustered (byear) standard-errors in parentheses
*Signif. Codes: **: 0.01, *: 0.05, †: 0.1*

Table A2: Full regression table for models reported in Figure 5.

Dependent Variable:			Death Age	
Model:	No Controls	Controls	Family FE	Family FE + Controls
Homeowner	0.6366**	0.5328**	0.3132**	0.3135**
	(0.0561)	(0.0605)	(0.0734)	(0.0738)
Education (years)		0.1699**		0.1389**
		(0.0134)		(0.0187)
Race: Other		-2.654**		0.7235
		(0.9509)		(1.364)
Race: White		-0.3457		-1.580
		(0.2813)		(0.9868)
Urban		-0.3713**		-0.0964
		(0.0715)		(0.1080)
Fixed-effects				
Birth Year	Yes	Yes	Yes	Yes
Occupation		Yes		Yes
Marital Status		Yes		Yes
State (1940)		Yes		Yes
Family			Yes	Yes
Birth Order			Yes	Yes
Observations	84,945	84,945	84,945	84,945
R^2	0.03617	0.04956	0.54446	0.54876
Within R^2	0.00129	0.00380	0.00028	0.00135

Clustered (byear) standard-errors in parentheses
*Signif. Codes: **: 0.01, *: 0.05, †: 0.1*

Table A3: Full regression table for models reported in Figure 6.

Dependent Variable:	Death Age		
Model:	No Controls	Controls	Controls + Sibling FE
Home Value Quartile 1	0.3782**	0.4365**	0.2229†
	(0.0752)	(0.0664)	(0.1355)
Home Value Quartile 2	0.5284**	0.4544**	0.2245†
	(0.0666)	(0.0767)	(0.1510)
Home Value Quartile 3	0.8655**	0.7275**	0.5145**
	(0.0947)	(0.1083)	(0.1595)
Home Value Quartile 4	0.9880**	0.6105**	0.3617*
	(0.1333)	(0.1240)	(0.1818)
Education (Years)		0.1666**	0.1352**
		(0.0134)	(0.0202)
Race: Other		-2.463*	0.8707
		(0.9610)	(1.455)
Race: White		-0.3728	-1.621
		(0.2753)	(0.9901)
Urban		-0.3819**	-0.0894
		(0.0782)	(0.1205)
Fixed-effects			
Birth Year	Yes	Yes	Yes
Occupation		Yes	Yes
Marital Status		Yes	Yes
State (1940)		Yes	Yes
Family			Yes
Birth Order			Yes
Observations	83,990	83,990	83,990
R^2	0.03648	0.04978	0.54927
Within R^2	0.00155	0.00382	0.00138

Clustered (byear) standard-errors in parentheses
*Signif. Codes: **: 0.01, *: 0.05, †: 0.1*

Table A4: Full regression table for models reported in Figure 8.