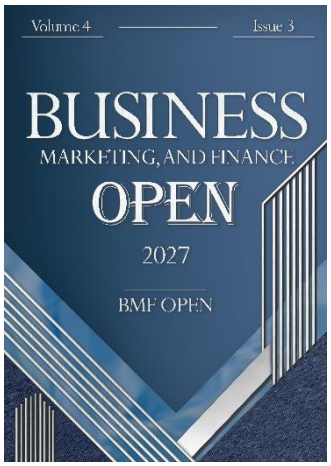
Housing Leverage as a Catalyst or Constraint for Entrepreneurship: Micro-Level Evidence from the U.S. Economy

Mohsen Khalili Dermani [1,*]



Citation: Khalili Dermani, M. (2027). Housing Leverage as a Catalyst or Constraint for Entrepreneurship: Micro-Level Evidence from the U.S. Economy. *Business, Marketing, and Finance Open*, 4(3), 1-19.

Received: 25 March 2026
Revised: 22 June 2026
Accepted: 29 June 2026
Initial Publication: 01 July 2026
Final Publication: 01 May 2027

[1] Department of Economics and Finance, Tehran Institute for Advanced Studies (TEIAS), Khatam University, Tehran, Iran;

* Correspondence: mkhdermani@gmail.com

Abstract: This study aimed to examine whether housing leverage functions as a catalyst or constraint for entrepreneurship by analyzing the micro-level association between housing debt, home equity, mortgage burden, and entrepreneurial participation in the U.S. economy. This quantitative explanatory study used secondary micro-level data from 18,742 working-age U.S. individuals aged 25 to 64 years. The final sample included 11,386 homeowners and 7,356 renters, of whom 2,318 were classified as entrepreneurs and 16,424 as non-entrepreneurs. Housing leverage was measured primarily through the loan-to-value ratio, while additional housing-finance indicators included home equity and mortgage payment burden. Data were analyzed using descriptive statistics, bivariate tests, logistic regression models, non-linear leverage specifications, marginal effects, and robustness checks. Logistic regression showed that higher loan-to-value ratios were significantly associated with lower odds of entrepreneurship in the fully adjusted model (OR = 0.68, $p < 0.001$). Home equity was positively associated with entrepreneurship (OR = 1.06, $p < 0.01$), whereas mortgage payment burden was negatively associated with entrepreneurship (OR = 0.59, $p < 0.001$). Non-linear models indicated that moderate-leverage homeowners had higher odds of entrepreneurship than mortgage-free homeowners (OR = 1.14, $p = 0.036$), while high-leverage homeowners (OR = 0.61, $p < 0.001$) and negative-equity homeowners (OR = 0.34, $p < 0.001$) had significantly lower odds. Marginal effects confirmed that higher leverage reduced the predicted probability of entrepreneurship by 4.1 percentage points. Housing leverage has a dual role in entrepreneurial activity. Moderate leverage may support entrepreneurship through collateral and credit-access channels, whereas excessive leverage and high mortgage burden constrain entrepreneurship by increasing household financial vulnerability and reducing risk-taking capacity.

Keywords: housing leverage; entrepreneurship; mortgage debt; home equity; loan-to-value ratio; household finance; U.S. economy

1. Introduction

Entrepreneurship is widely recognized as a central mechanism through which economies renew productive capacity, absorb labor-market shocks, generate innovation, and translate individual initiative into broader patterns of regional and national development. In the U.S. economy, the entrepreneurial process is deeply embedded in household balance sheets, local credit markets, housing wealth, labor-market institutions, educational pathways, and uneven access to financial resources. New business creation is rarely determined only by individual motivation or opportunity recognition; rather, it is shaped by the interaction between personal assets, debt obligations, collateral capacity, risk tolerance, and the institutional environment in

which households make occupational and investment decisions. For this reason, entrepreneurship must be understood not merely as an individual behavioral outcome but as a financial and socioeconomic decision that is constrained or enabled by household-level resource structures. Recent studies on entrepreneurship have increasingly emphasized the importance of human capital, financial development, credit access, and institutional conditions in explaining who becomes an entrepreneur, who remains dependent on wage employment, and who can transform entrepreneurial intention into actual business activity [1-4].

Housing occupies a distinctive position within this framework because it is both a consumption good and a financial asset. For many households, housing represents the largest component of personal wealth and the most important form of collateral available for borrowing. At the same time, housing is often financed through long-term debt, which creates repayment obligations, liquidity pressure, and exposure to interest-rate and asset-price fluctuations. This dual character makes housing leverage particularly important for understanding entrepreneurial dynamics. When housing leverage increases access to capital, expands borrowing capacity, and strengthens perceived financial security, it may support business formation and entrepreneurial investment. Conversely, when housing leverage increases debt burden, repayment stress, and vulnerability to housing-market shocks, it may discourage risk-taking and reduce the probability of entering entrepreneurship. The relationship between housing and entrepreneurship is therefore theoretically ambiguous and empirically important, especially in economies such as the United States, where household wealth accumulation, mortgage markets, and small-business financing are strongly interconnected [5-8].

The study of housing leverage and entrepreneurship must begin from the broader observation that entrepreneurial entry is shaped by financial constraints. Individuals may identify business opportunities and possess relevant skills, but they may still be unable or unwilling to launch a venture if they lack sufficient capital, face high borrowing costs, or cannot absorb income volatility during the early stages of business development. Financial constraints influence occupational choice by affecting the relative attractiveness of wage employment, self-employment, and business ownership. In this regard, households with stronger asset positions may be better able to overcome start-up barriers, while households with weaker liquidity or higher debt exposure may postpone or avoid entrepreneurial activity. Theoretical and empirical work on occupational choice, firm-level financial conditions, and regional financial development shows that access to finance and the cost of capital are central determinants of entrepreneurial participation and firm performance [3, 9-11].

Housing wealth may reduce these constraints by functioning as collateral. Homeowners may be able to use home equity, housing-backed credit, or perceived asset security to finance business start-up costs, absorb temporary income losses, or signal creditworthiness to lenders. Under this view, housing leverage can act as a catalyst for entrepreneurship because it connects household asset ownership with business financing. In contexts where formal business credit is difficult to obtain, housing assets may become an indirect source of entrepreneurial finance, particularly for small businesses and self-employed workers whose ventures lack established operating histories. The housing boom may also influence selection into entrepreneurship by enabling individuals with rising home equity to enter business ownership, thereby changing the composition of entrepreneurs and potentially encouraging entry among households that would otherwise remain credit constrained [5-7]. This catalytic interpretation is consistent with broader evidence that financial development and asset accumulation can expand entrepreneurial possibilities by improving the ability of individuals and firms to mobilize capital [2, 10].

However, the same housing leverage that expands collateral capacity may simultaneously create financial fragility. Mortgage debt and housing-related liabilities reduce disposable income, increase fixed monthly

obligations, and may make households more cautious about undertaking additional uncertain investments. Entrepreneurship typically requires tolerance for income instability, delayed returns, and the possibility of failure. Highly leveraged households may therefore respond to housing debt by avoiding entrepreneurial risk, preserving wage income, and limiting exposure to business uncertainty. Recent research on housing debt and entrepreneurship shows that debt obligations may suppress entrepreneurial behavior when repayment pressure outweighs collateral benefits [8]. Similarly, studies of house-price shocks suggest that housing wealth can produce competing effects, increasing entrepreneurial entry through collateral channels while reducing it through affordability pressures, debt burden, and regional cost dynamics [7]. The empirical challenge is therefore not simply to determine whether housing leverage increases or decreases entrepreneurship, but to identify the conditions under which it operates as an enabling mechanism or a restrictive force.

The U.S. economy provides a particularly relevant context for examining this issue because entrepreneurship is closely tied to household finance, local labor markets, and regional inequality. American households experience substantial variation in homeownership, mortgage exposure, housing price appreciation, credit access, and wealth accumulation. At the same time, entrepreneurial opportunities are unevenly distributed across regions, social groups, educational backgrounds, and financial networks. Regional comparisons in the United States show that successful cities and local economies often differ in institutional capacity, infrastructure, labor-market composition, and business ecosystems [12]. These regional differences matter because housing markets are spatially specific: rising house prices may increase wealth for homeowners while worsening affordability for renters and younger potential entrepreneurs. Therefore, the housing–entrepreneurship relationship must be examined at the micro level, where individual housing status, leverage exposure, credit access, and entrepreneurial intention intersect.

Micro-level analysis is essential because aggregate trends may conceal heterogeneous household experiences. A housing-market expansion can increase average wealth while simultaneously widening inequality between homeowners and non-homeowners, older and younger cohorts, or high-income and low-income households. Wealth inequality and financial inequality are directly relevant to entrepreneurship because they shape the capacity to absorb risk and access external finance. Evidence from the COVID-19 recession suggests that inequality can strongly affect entrepreneurial outcomes by altering exposure to shocks, liquidity, and opportunity structures [13]. In rapidly changing economies, wealth gaps may widen during transitions, affecting the distribution of economic opportunity and the capacity of households to participate in risky financial and entrepreneurial activities [14, 15]. Entrepreneurial wealth itself can influence employment outcomes and broader economic adjustment, showing that the wealth position of entrepreneurs is not merely a private matter but a factor connected to labor demand and economic resilience [16].

Social inequality also shapes the relationship between housing leverage and entrepreneurship. Access to housing assets, credit markets, venture networks, education, and entrepreneurial support is not evenly distributed across gender, race, class, or geography. Research on women-led ventures shows that financial market frictions can affect venture performance and may intensify disadvantages for entrepreneurs who face unequal access to capital and networks [17]. Work on networking frictions in venture capital similarly demonstrates that social and informational barriers can contribute to gender gaps in entrepreneurship [18]. Broader discussions of race, class, gender, and social entrepreneurship further indicate that entrepreneurial opportunity is conditioned by positionality and social structure rather than determined solely by individual agency [19]. These perspectives are important for housing leverage because households with similar entrepreneurial aspirations may face very different constraints depending on their asset base, credit history, neighborhood, social capital, and access to financial institutions.

Urban and regional conditions further complicate this relationship. Housing markets are embedded in neighborhood change, migration patterns, urban development, and local economic restructuring. Out-migration and urban decline can affect household wealth, business opportunity, and community-level entrepreneurial ecosystems, particularly in places experiencing long-term social and economic stress [20]. At the same time, alternative forms of urban regeneration and social entrepreneurship show that local development can create new entrepreneurial spaces, though these spaces may not benefit all groups equally [21]. Research on crowdfunding cities and urban social entrepreneurship also demonstrates that financial experimentation, speculation, solidarity, and local development are increasingly intertwined in contemporary urban economies [22]. In such contexts, housing leverage may reflect more than household debt; it may also signal the relationship between urban property markets, local opportunity structures, and the financialization of everyday economic life.

Human capital remains another critical determinant of entrepreneurship and may moderate the influence of housing leverage. Education can enhance entrepreneurial capacity by improving skills, opportunity recognition, managerial competence, and confidence in navigating uncertainty [1]. University entrepreneurship programs and entrepreneurial universities have been shown to shape entrepreneurial intention, innovation ecosystems, and the institutional pathways through which knowledge is translated into venture creation [23, 24]. Academic start-up experiences and scholar-entrepreneurial organizations illustrate how human capital, institutional support, negotiation, and organizational design can influence the development of entrepreneurial activity [25]. Even business libraries and academic knowledge infrastructures can play a role in supporting entrepreneurship through information access, market knowledge, and evidence-based decision-making [26]. These findings suggest that housing leverage may be most productive when combined with human capital and institutional resources that enable households to convert financial capacity into viable entrepreneurial action.

Policy and institutional environments also influence whether housing leverage becomes a catalyst or constraint. Labor-market protections, workers' compensation laws, and employment institutions affect the opportunity cost of entrepreneurship and the perceived security of leaving wage employment [4]. Medium- and long-term growth policies can shape the macroeconomic conditions under which entrepreneurial activity becomes productive and sustainable [27]. Productivity-enhancing institutions and policies are also essential because entrepreneurship contributes to development only when it is supported by efficient markets, infrastructure, financing mechanisms, and regulatory quality [28]. In addition, reparations, redistribution, and development-oriented interventions may affect entrepreneurial capacity by altering asset positions, financial security, and access to opportunity among historically disadvantaged populations [29]. These institutional perspectives highlight that the housing leverage–entrepreneurship nexus is not isolated from law, policy, regional development, and social protection.

Demographic change further adds complexity to entrepreneurial dynamics. Population ageing can affect economic growth, labor supply, savings behavior, risk-taking, and business succession patterns [30]. Older households may have greater housing equity but lower willingness to undertake entrepreneurial risk, whereas younger households may have stronger entrepreneurial ambition but weaker homeownership access and higher barriers to collateral-based borrowing. This generational tension is highly relevant in the U.S. context, where housing affordability and wealth accumulation differ substantially across age cohorts. At the same time, entrepreneurial participation can influence household allocation toward risky financial assets, indicating that entrepreneurship and household portfolio decisions are mutually connected rather than independent domains [15]. Housing leverage may therefore interact with age, financial risk preference, and asset allocation in shaping entrepreneurial entry and intensity.

Despite growing research on housing markets, credit constraints, and entrepreneurship, important gaps remain. First, many studies examine housing wealth, housing prices, or debt separately, while fewer studies conceptualize housing leverage as a dual mechanism that may simultaneously generate collateral capacity and repayment pressure. Second, much of the existing evidence is context-specific, including studies from China, Peru, Colombia, and other national settings, whereas the U.S. economy requires focused attention because of its distinctive mortgage market, entrepreneurial ecosystem, household wealth structure, and regional inequality [6, 8, 10, 29]. Third, entrepreneurship is often measured as entry or intention without adequately distinguishing between the channels through which leverage affects entrepreneurial outcomes. A micro-level approach can address these gaps by examining how housing leverage relates to perceived housing wealth, debt pressure, credit access, financial constraint, entrepreneurial intention, entrepreneurial activity, and risk-taking tendency within the same analytical framework.

Accordingly, the present study is grounded in the assumption that housing leverage is neither inherently beneficial nor inherently harmful for entrepreneurship. Its effect depends on the balance between asset-backed financial capacity and debt-induced financial vulnerability. When housing leverage strengthens perceived collateral capacity and access to entrepreneurial credit, it may encourage entrepreneurial intention and activity. When it increases repayment pressure and perceived financial constraint, it may reduce risk-taking and suppress entrepreneurial participation. This dual-pathway perspective is especially important for understanding entrepreneurship in a financially complex economy where household balance sheets are central to opportunity, inequality, and economic mobility. By examining housing leverage at the micro level, the study contributes to entrepreneurship research, household finance, and regional economic analysis by clarifying the mechanisms through which housing-related financial structures shape entrepreneurial behavior.

The aim of this study was to examine whether housing leverage functions as a catalyst or constraint for entrepreneurship by analyzing its direct and indirect relationships with perceived collateral capacity, housing debt pressure, access to entrepreneurial credit, perceived financial constraint, entrepreneurial intention, entrepreneurial activity, and risk-taking tendency in the context of micro-level evidence relevant to the U.S. economy.

2. Methodology

This study was designed as a quantitative, applied, and explanatory research study using a micro-level observational design to examine whether housing leverage functions as a catalyst or constraint for entrepreneurial activity in the United States. The study relied on secondary individual- and household-level data drawn from nationally representative microeconomic survey records of U.S. households. The analytical framework was developed to assess the relationship between housing leverage and entrepreneurship by focusing on homeowners' balance-sheet conditions, household financial constraints, and entrepreneurial outcomes. Because the objective of the study was to identify whether mortgage-based housing leverage facilitates entrepreneurship through collateral and liquidity channels or constrains entrepreneurship through debt burden and repayment pressure, the research design was based on cross-sectional microeconometric analysis supplemented by robustness specifications across household subgroups. The statistical population consisted of U.S. household heads and adult respondents of working age who reported complete information on housing status, mortgage debt, home value, household income, demographic characteristics, labor-market status, and entrepreneurial activity. After applying inclusion and exclusion criteria, the final sample included 18,742 individuals, of whom 11,386 were homeowners and 7,356 were renters. Among homeowners, 8,914 individuals reported outstanding mortgage debt, while 2,472 owned their

homes without mortgage debt. In the full analytical sample, 2,318 individuals were classified as entrepreneurs or self-employed business owners, while 16,424 individuals were classified as non-entrepreneurs. Respondents were included if they were between 25 and 64 years of age, had valid household income data, and had no missing values for the main independent, dependent, and control variables. Individuals outside the working-age population, retired respondents, full-time students without labor-market participation, and observations with incomplete housing or entrepreneurship information were excluded from the final sample to improve internal consistency and reduce measurement bias. The unit of analysis was the individual respondent, while household-level financial variables were used to capture the economic environment in which entrepreneurial decisions were made.

The data collection process was based on standardized micro-level survey instruments that recorded household demographic characteristics, housing assets, mortgage liabilities, income, employment status, and business ownership indicators. The main dependent variable was entrepreneurship, operationalized as a binary indicator identifying respondents who were self-employed, owned an incorporated or unincorporated business, or reported business income as a meaningful component of total household income. Respondents who were wage-employed, unemployed, or outside entrepreneurship-related labor-market activity were coded as non-entrepreneurs. The key independent variable was housing leverage, measured primarily through the loan-to-value ratio, calculated as outstanding mortgage debt divided by the self-reported or estimated market value of the primary residence. Higher values of this ratio indicated greater housing leverage and lower home equity, while lower values indicated stronger housing equity positions. In addition to the continuous housing leverage measure, categorical indicators were created to distinguish households with low leverage, moderate leverage, high leverage, and negative or near-negative equity positions. This classification made it possible to examine whether the effect of housing leverage on entrepreneurship was linear or whether leverage became restrictive after a certain threshold.

Additional housing-related variables were collected to improve the explanatory precision of the model. These variables included homeownership status, outstanding mortgage balance, current home value, monthly mortgage payment, home equity, housing tenure, and mortgage payment burden. Home equity was measured as the difference between the estimated home value and outstanding mortgage debt. Mortgage burden was measured as the ratio of monthly mortgage payments to monthly household income, which captured the extent to which housing debt obligations reduced disposable income and risk-taking capacity. Household financial characteristics included total household income, non-housing wealth, savings, access to credit, debt obligations, and household size. Demographic and socioeconomic variables included age, gender, marital status, educational attainment, race or ethnicity, number of dependents, employment status, region of residence, and urban or rural location. These variables were included because entrepreneurial entry is shaped not only by housing wealth and debt structure but also by human capital, family responsibilities, regional opportunity structures, and broader socioeconomic position. The use of standardized secondary data allowed the study to rely on consistent measurement procedures and nationally comparable household-level indicators. All variables were screened for logical consistency, extreme values, and missingness before the final dataset was constructed.

Data analysis was conducted using descriptive statistics, bivariate comparisons, and multivariate econometric models. First, descriptive statistics were calculated to summarize the demographic, socioeconomic, housing, and entrepreneurial characteristics of the sample. Frequencies and percentages were used for categorical variables, while means, standard deviations, minimum values, and maximum values were used for continuous variables. The distribution of entrepreneurs and non-entrepreneurs was compared across levels of housing leverage, homeownership status, mortgage debt, education, income, and regional location. Independent-sample comparison

tests were used to identify preliminary differences between entrepreneurial and non-entrepreneurial respondents. Chi-square tests were applied for categorical variables, and independent-sample t-tests were used for continuous variables where appropriate. Before estimating the main models, the data were examined for missing values, influential observations, multicollinearity, and distributional irregularities. Observations with incomplete information on core variables were removed through listwise deletion, while extreme financial values were winsorized at the upper and lower tails to reduce the influence of outliers without altering the general structure of the data.

The main analysis was performed using binary logistic regression because the dependent variable, entrepreneurship, was coded as a dichotomous outcome. The baseline model estimated the probability of being an entrepreneur as a function of housing leverage, while subsequent models added demographic controls, socioeconomic controls, household financial variables, and regional fixed effects. The results were reported using odds ratios, standard errors, confidence intervals, and significance levels. To examine whether housing leverage acted as a catalyst or constraint, both linear and non-linear specifications of leverage were estimated. In the linear specification, the loan-to-value ratio was entered as a continuous predictor. In the non-linear specification, leverage categories were included to determine whether moderate leverage increased entrepreneurial likelihood while excessive leverage reduced it. Interaction terms were also estimated to assess whether the association between housing leverage and entrepreneurship differed by household income, age group, educational attainment, and regional housing-market conditions. For example, interaction models tested whether highly educated homeowners or higher-income households were better able to transform housing leverage into entrepreneurial entry, while lower-income households experienced leverage mainly as a financial constraint.

Several robustness analyses were conducted to evaluate the stability of the findings. First, the models were re-estimated using alternative definitions of entrepreneurship, including self-employment status, business ownership, and receipt of business income. Second, the sample was restricted to homeowners with mortgage debt to isolate the effect of leverage among households directly exposed to mortgage obligations. Third, homeowners without mortgages and renters were analyzed separately as comparison groups. Fourth, alternative measures of housing-related financial pressure, including mortgage payment burden and home equity, were introduced into the models. Fifth, marginal effects were calculated to provide a more interpretable estimate of how changes in housing leverage were associated with changes in the predicted probability of entrepreneurship. Model fit was assessed using likelihood-ratio statistics, pseudo-R^2 values, classification accuracy, and comparison of nested model specifications. Statistical significance was evaluated at the 0.05 level, while results at the 0.01 and 0.001 levels were interpreted as stronger evidence. The overall analytical strategy was designed to determine whether housing leverage expands entrepreneurial opportunity by providing access to collateral and household wealth or suppresses entrepreneurial entry by increasing financial vulnerability, debt repayment pressure, and risk aversion.

3. Findings and Results

The final analytical sample consisted of 18,742 working-age individuals from the United States economy, all of whom had complete information on housing status, mortgage debt, household income, demographic characteristics, and entrepreneurial activity. The respondents were between 25 and 64 years of age, with a mean age of 43.82 years and a standard deviation of 10.91 years. In terms of gender distribution, 9,642 respondents were male, representing 51.45% of the sample, while 9,100 respondents were female, representing 48.55%. Regarding marital status, 10,984 respondents were married or living with a partner, accounting for 58.61% of the sample,

whereas 7,758 respondents were single, divorced, separated, or widowed, accounting for 41.39%. In relation to educational attainment, 4,127 respondents had a high school diploma or less, 5,946 had some college or an associate degree, 5,812 had a bachelor's degree, and 2,857 had a graduate or professional degree. The sample therefore represented a broad range of human-capital backgrounds, which was important because entrepreneurship is strongly shaped by differences in education, labor-market opportunity, and access to financial resources.

With respect to household and regional characteristics, 11,386 respondents were homeowners, representing 60.75% of the total sample, while 7,356 respondents were renters, representing 39.25%. Among homeowners, 8,914 respondents had outstanding mortgage debt, while 2,472 owned their homes without mortgage debt. The mean annual household income in the full sample was $86,430.27, with a standard deviation of $49,816.42, indicating substantial variation in household economic capacity. The mean household size was 2.91 persons, and 37.64% of respondents reported having at least one dependent child in the household. Regional distribution was also relatively balanced, with 3,912 respondents from the Northeast, 4,276 from the Midwest, 6,214 from the South, and 4,340 from the West. In terms of entrepreneurial status, 2,318 respondents were classified as entrepreneurs or self-employed business owners, representing 12.37% of the sample, while 16,424 respondents were classified as non-entrepreneurs, representing 87.63%. This distribution provided a sufficiently large entrepreneurial subsample for estimating the relationship between housing leverage and entrepreneurial participation.

Table 1. Descriptive Statistics of Main Study Variables

Variable	Full sample Mean	Full sample SD	Entrepreneurs Mean	Entrepreneurs SD	Non-entrepreneurs Mean	Non-entrepreneurs SD
Age	43.82	10.91	44.76	10.37	43.69	10.98
Annual household income ($)	86,430.27	49,816.42	98,742.63	58,914.25	84,692.15	48,217.30
Home value among homeowners ($)	318,524.81	176,308.66	351,986.42	189,743.58	313,732.09	173,924.41
Outstanding mortgage debt among mortgagors ($)	213,674.55	128,512.37	224,931.86	135,604.29	211,942.63	127,317.44
Home equity among homeowners ($)	112,486.24	97,631.58	136,882.91	105,746.33	108,932.70	95,986.84
Loan-to-value ratio	0.67	0.24	0.61	0.23	0.68	0.24
Mortgage payment burden	0.24	0.13	0.21	0.12	0.25	0.13
Non-housing financial assets ($)	42,175.36	61,894.72	56,803.14	72,941.65	40,109.82	59,874.50
Total non-mortgage debt ($)	18,946.73	26,407.19	17,215.44	24,982.61	19,191.21	26,589.33
Household size	2.91	1.42	2.86	1.39	2.92	1.43

Table 1 presents the descriptive statistics for the main variables used in the analysis, with separate comparisons between entrepreneurs and non-entrepreneurs. The results show that entrepreneurs had a slightly higher mean age than non-entrepreneurs, suggesting that entrepreneurial participation was somewhat more common among individuals with greater labor-market experience and accumulated household resources. Entrepreneurs also reported a higher average annual household income than non-entrepreneurs, with a mean income of $98,742.63 compared with $84,692.15 among non-entrepreneurs. This difference indicates that entrepreneurial households were generally positioned more favorably in terms of income capacity, although the relatively large standard deviations show considerable heterogeneity within both groups. Housing-related indicators also revealed meaningful differences. Entrepreneurs had higher average home values and substantially higher home equity than

non-entrepreneurs, suggesting that stronger housing wealth positions may be associated with entrepreneurial entry or persistence. At the same time, entrepreneurs had a lower mean loan-to-value ratio than non-entrepreneurs, indicating that entrepreneurs were less leveraged relative to the value of their homes. The mean mortgage payment burden was also lower among entrepreneurs, implying that lower debt-service pressure may provide greater flexibility for risk-taking, business formation, and self-employment. In addition, entrepreneurs held larger non-housing financial assets and slightly lower non-mortgage debt, which suggests that entrepreneurial participation was associated with stronger overall balance-sheet conditions rather than housing leverage alone. These descriptive patterns provide preliminary support for the idea that housing finance can operate through two opposing channels: home equity may facilitate entrepreneurship by improving collateral capacity and financial security, while excessive leverage and high mortgage burden may restrict entrepreneurship by increasing household financial vulnerability.

Table 2. Distribution of Entrepreneurship by Housing Status and Housing Leverage Category

Housing and leverage category	Total respondents	Entrepreneurs n	Entrepreneurs %	Non-entrepreneurs n	Non-entrepreneurs %
Renters	7,356	712	9.68	6,644	90.32
Homeowners without mortgage debt	2,472	391	15.82	2,081	84.18
Low leverage homeowners, LTV below 50%	2,186	354	16.19	1,832	83.81
Moderate leverage homeowners, LTV 50% to 80%	4,117	684	16.61	3,433	83.39
High leverage homeowners, LTV 81% to 100%	1,948	153	7.85	1,795	92.15
Negative or near-negative equity homeowners, LTV above 100%	663	24	3.62	639	96.38
Full sample	18,742	2,318	12.37	16,424	87.63

Table 2 reports the distribution of entrepreneurship across housing status and housing leverage categories. The findings indicate that entrepreneurship was least common among homeowners with negative or near-negative equity, where only 3.62% of respondents were classified as entrepreneurs. High-leverage homeowners also showed a relatively low entrepreneurship rate of 7.85%, which was below the rate observed among renters. By contrast, entrepreneurship was more frequent among homeowners without mortgage debt, low-leverage homeowners, and moderate-leverage homeowners. The highest entrepreneurship rate was observed among moderate-leverage homeowners, where 16.61% of respondents were entrepreneurs, followed closely by low-leverage homeowners at 16.19% and mortgage-free homeowners at 15.82%. These results suggest that homeownership itself may be associated with entrepreneurial activity, but the nature of this association depends strongly on the level of mortgage leverage. Moderate levels of leverage may reflect access to housing wealth, credit history, and collateral capacity without excessive repayment pressure, thereby supporting entrepreneurial entry. However, once leverage rises above 80% of home value, the entrepreneurial rate declines sharply. This decline becomes especially pronounced when the loan-to-value ratio exceeds 100%, indicating that highly constrained homeowners may lack sufficient equity, liquidity, or risk tolerance to pursue entrepreneurship. Therefore, the pattern in Table 2 supports a non-linear interpretation of housing leverage: leverage may function as a catalyst when it is accompanied by usable home equity and manageable debt obligations, but it may become a constraint when the household balance sheet is dominated by mortgage exposure and limited equity.

Table 3. Bivariate Comparisons Between Entrepreneurs and Non-entrepreneurs

Variable	Entrepreneurs Mean or %	Non-entrepreneurs Mean or %	Test statistic	p-value
Age	44.76	43.69	t = 4.42	<0.001
Annual household income ($)	98,742.63	84,692.15	t = 12.78	<0.001
Homeownership rate	69.28%	59.54%	χ^2 = 82.41	<0.001
Mortgage debt among homeowners	77.29%	78.42%	χ^2 = 1.18	0.277
Home equity among homeowners ($)	136,882.91	108,932.70	t = 10.56	<0.001
Loan-to-value ratio	0.61	0.68	t = -13.41	<0.001
Mortgage payment burden	0.21	0.25	t = -12.16	<0.001
Bachelor's degree or higher	54.70%	45.24%	χ^2 = 73.56	<0.001
Non-housing financial assets ($)	56,803.14	40,109.82	t = 11.34	<0.001
Total non-mortgage debt ($)	17,215.44	19,191.21	t = -3.39	0.001

Table 3 presents bivariate comparisons between entrepreneurs and non-entrepreneurs. The results show statistically significant differences across most of the major financial, housing, and socioeconomic variables. Entrepreneurs were significantly older than non-entrepreneurs, although the magnitude of the age difference was modest. More importantly, entrepreneurs reported significantly higher household income, higher rates of homeownership, greater home equity, and larger non-housing financial assets. These findings suggest that entrepreneurship was more common among individuals with stronger economic resources and more favorable household balance-sheet positions. The homeownership rate among entrepreneurs was 69.28%, compared with 59.54% among non-entrepreneurs, and this difference was statistically significant. However, the share of homeowners with mortgage debt did not differ significantly between entrepreneurs and non-entrepreneurs, indicating that the mere presence of mortgage debt was not the key distinction. Instead, the important differences appeared in the intensity and burden of that debt. Entrepreneurs had a significantly lower loan-to-value ratio and a significantly lower mortgage payment burden than non-entrepreneurs. This indicates that entrepreneurs were not simply more likely to own homes; rather, they were more likely to hold housing assets under conditions of stronger equity and lower repayment pressure. Educational differences were also statistically significant, with a higher proportion of entrepreneurs holding at least a bachelor's degree. Overall, the bivariate results support the view that entrepreneurship is positively associated with household financial strength, home equity, and human capital, while it is negatively associated with high housing leverage and elevated mortgage burden. These findings justify the use of multivariate models to determine whether housing leverage remains significantly related to entrepreneurship after accounting for income, education, demographic characteristics, and regional variation.

Table 4. Logistic Regression Models Predicting Entrepreneurial Status

Predictor	Model 1 OR	Model 1 SE	Model 2 OR	Model 2 SE	Model 3 OR	Model 3 SE
Loan-to-value ratio	0.54***	0.04	0.61***	0.05	0.68***	0.06
Home equity, per $50,000	1.12***	0.02	1.09***	0.02	1.06**	0.02
Mortgage payment burden	0.47***	0.06	0.53***	0.07	0.59***	0.08
Annual household income, per $10,000	—	—	1.04***	0.01	1.03***	0.01
Non-housing financial assets, per $10,000	—	—	1.03***	0.01	1.02**	0.01
Total non-mortgage debt, per $10,000	—	—	0.97*	0.01	0.98	0.01
Age	—	—	1.01***	0.00	1.01**	0.00
Male	—	—	1.18***	0.04	1.16***	0.04
Married or partnered	—	—	1.11**	0.04	1.08*	0.04
Bachelor's degree or higher	—	—	1.31***	0.05	1.24***	0.05
Regional fixed effects	No	—	No	—	Yes	—
Urban location	No	—	No	—	Yes	—
Number of observations	18,742	—	18,742	—	18,742	—

Pseudo-R^2	0.041	—	0.087	—	0.103	—
Likelihood-ratio χ^2	286.14***	—	614.72***	—	731.46***	—

Note. OR = odds ratio; SE = standard error. *p < 0.05, **p < 0.01, ***p < 0.001.

Table 4 presents the logistic regression models predicting entrepreneurial status. Model 1 included only the main housing-related predictors and showed that the loan-to-value ratio was negatively associated with entrepreneurship. The odds ratio of 0.54 indicated that higher housing leverage was associated with substantially lower odds of being an entrepreneur. Home equity was positively associated with entrepreneurship, meaning that each additional $50,000 in home equity increased the odds of entrepreneurial participation. Mortgage payment burden was also negatively associated with entrepreneurship, suggesting that households allocating a larger share of income to mortgage payments were less likely to engage in entrepreneurial activity. Model 2 added household financial and demographic controls, including income, non-housing assets, non-mortgage debt, age, gender, marital status, and educational attainment. After these adjustments, the loan-to-value ratio remained negative and statistically significant, although the magnitude of the association became smaller. This indicates that part of the relationship between leverage and entrepreneurship was explained by broader household financial capacity, but housing leverage retained an independent constraining effect. Model 3 further added regional fixed effects and urban location controls. The results remained statistically significant, with a loan-to-value odds ratio of 0.68, a home equity odds ratio of 1.06, and a mortgage payment burden odds ratio of 0.59. These findings demonstrate that the association between housing leverage and entrepreneurship was not merely a reflection of regional housing-market differences or urban opportunity structures. Overall, the regression results provide strong evidence that housing wealth and housing debt have opposite associations with entrepreneurship. Home equity appears to support entrepreneurial participation by increasing collateral value and household financial resilience, whereas high leverage and high mortgage burden appear to restrict entrepreneurship by reducing disposable resources and increasing risk exposure.

Table 5. Non-linear Effects of Housing Leverage on Entrepreneurship

Housing leverage category	Odds ratio	Standard error	95% confidence interval	p-value
Renters	0.72***	0.05	0.63–0.82	<0.001
Homeowners without mortgage debt	1.00	Reference	Reference	Reference
Low leverage homeowners, LTV below 50%	1.08	0.07	0.95–1.23	0.241
Moderate leverage homeowners, LTV 50% to 80%	1.14*	0.07	1.01–1.29	0.036
High leverage homeowners, LTV 81% to 100%	0.61***	0.06	0.50–0.74	<0.001
Negative or near-negative equity homeowners, LTV above 100%	0.34***	0.08	0.22–0.51	<0.001
Annual household income, per $10,000	1.03***	0.01	1.02–1.04	<0.001
Bachelor's degree or higher	1.23***	0.05	1.14–1.33	<0.001
Non-housing financial assets, per $10,000	1.02**	0.01	1.01–1.04	0.004
Regional fixed effects	Included	—	—	—
Number of observations	18,742	—	—	—
Pseudo-R^2	0.112	—	—	—

Table 5 examines the non-linear association between housing leverage and entrepreneurship by replacing the continuous loan-to-value variable with leverage categories. Homeowners without mortgage debt were used as the reference category. The results reveal a clear non-linear pattern. Low-leverage homeowners did not differ significantly from mortgage-free homeowners, suggesting that low levels of mortgage debt were not meaningfully restrictive. Moderate-leverage homeowners had slightly higher odds of entrepreneurship than mortgage-free

homeowners, and this association was statistically significant. This finding suggests that moderate leverage may reflect productive access to housing credit and collateral capacity rather than financial distress. In other words, households with moderate mortgage leverage may be financially active enough to access credit while still retaining sufficient equity and repayment capacity to support entrepreneurial risk-taking. However, the relationship changed sharply at higher levels of leverage. High-leverage homeowners had significantly lower odds of entrepreneurship, with an odds ratio of 0.61, while homeowners in negative or near-negative equity had even lower odds, with an odds ratio of 0.34. These results indicate that excessive leverage is strongly associated with reduced entrepreneurial participation. Renters also had lower odds of entrepreneurship than mortgage-free homeowners, which may reflect limited collateral access and lower housing-based wealth accumulation. The non-linear results therefore support the central argument of the study: housing leverage can function as a catalyst only within a manageable range, but it becomes a constraint when debt exposure becomes excessive and home equity is insufficient.

Table 6. Marginal Effects of Housing Leverage and Household Financial Conditions on Predicted Probability of Entrepreneurship

Predictor	Average marginal effect	Standard error	z-value	p-value
Loan-to-value ratio	-0.041***	0.006	-6.83	<0.001
Home equity, per $50,000	0.007**	0.002	3.50	<0.001
Mortgage payment burden	-0.052***	0.008	-6.50	<0.001
Annual household income, per $10,000	0.004***	0.001	4.00	<0.001
Non-housing financial assets, per $10,000	0.003**	0.001	3.00	0.003
Bachelor's degree or higher	0.026***	0.005	5.20	<0.001
Married or partnered	0.011*	0.005	2.20	0.028
Male	0.019***	0.004	4.75	<0.001
Age	0.001**	0.000	3.12	0.002
Total non-mortgage debt, per $10,000	-0.002	0.001	-1.47	0.141

Table 6 reports the average marginal effects from the fully adjusted logistic regression model. Unlike odds ratios, marginal effects show the estimated change in the predicted probability of entrepreneurship associated with a change in each predictor. The results indicate that a one-unit increase in the loan-to-value ratio was associated with a 4.1 percentage-point decrease in the predicted probability of entrepreneurship, holding other variables constant. This is a substantively meaningful effect because the baseline entrepreneurship rate in the full sample was 12.37%. Mortgage payment burden had an even stronger negative marginal effect. A one-unit increase in the mortgage payment burden ratio was associated with a 5.2 percentage-point reduction in the predicted probability of entrepreneurship. Although a full one-unit increase is larger than the typical observed variation in the sample, the direction and magnitude of the coefficient show that mortgage repayment pressure was one of the most important financial constraints in the model. By contrast, home equity had a positive marginal effect: each additional $50,000 in home equity was associated with a 0.7 percentage-point increase in the probability of entrepreneurship. Household income and non-housing financial assets also had positive and statistically significant marginal effects, confirming that entrepreneurship was more likely among individuals with stronger financial capacity. Educational attainment had a particularly meaningful effect, as having a bachelor's degree or higher was associated with a 2.6 percentage-point increase in the probability of entrepreneurship. These findings reinforce the interpretation that housing leverage affects entrepreneurship through household balance-sheet channels. When leverage is accompanied by equity, liquidity, and manageable payment obligations, entrepreneurship becomes more feasible.

When leverage increases debt burden and reduces financial flexibility, it decreases the likelihood of entrepreneurial activity.

Table 7. Robustness Checks Using Alternative Entrepreneurship Definitions and Restricted Samples

Model specification	Key predictor	Odds ratio	Standard error	p-value	Number of observations
Alternative outcome: self-employment only	Loan-to-value ratio	0.71***	0.07	<0.001	18,742
Alternative outcome: business ownership only	Loan-to-value ratio	0.64***	0.08	<0.001	18,742
Alternative outcome: business income receipt	Loan-to-value ratio	0.69***	0.07	<0.001	18,742
Homeowners only	Loan-to-value ratio	0.66***	0.06	<0.001	11,386
Mortgagors only	Loan-to-value ratio	0.63***	0.07	<0.001	8,914
Excluding negative-equity homeowners	Loan-to-value ratio	0.74***	0.07	<0.001	18,079
Including mortgage burden instead of LTV	Mortgage payment burden	0.57***	0.08	<0.001	18,742
Including home equity instead of LTV	Home equity, per $50,000	1.08***	0.02	<0.001	18,742

Table 7 presents robustness checks designed to evaluate whether the main findings were sensitive to alternative definitions of entrepreneurship, sample restrictions, or alternative housing-finance measures. The results were highly consistent across specifications. When entrepreneurship was defined more narrowly as self-employment only, the loan-to-value ratio remained negative and statistically significant, with an odds ratio of 0.71. When the outcome was defined as business ownership only, the association became slightly stronger, with an odds ratio of 0.64. Similarly, when entrepreneurship was defined as receipt of business income, the loan-to-value ratio remained negative and significant. These results indicate that the main findings did not depend on a single operational definition of entrepreneurship. The relationship also remained stable when the sample was restricted to homeowners and when it was further restricted to mortgagors only. This is important because it shows that the negative effect of leverage was not simply caused by differences between renters and homeowners, but was also present among households directly exposed to mortgage debt. When negative-equity homeowners were excluded, the loan-to-value ratio remained statistically significant, although the magnitude was somewhat weaker, suggesting that the constraining effect of leverage was not driven exclusively by the most financially distressed households. Finally, alternative housing-finance measures produced results consistent with the main model. Mortgage payment burden was negatively associated with entrepreneurship, while home equity was positively associated with entrepreneurship. Taken together, the robustness checks confirm that the central findings are stable: housing leverage is negatively associated with entrepreneurial participation when it reflects high debt exposure and repayment pressure, while housing equity is positively associated with entrepreneurship when it strengthens household collateral capacity and financial resilience.

Overall, the findings provide clear empirical support for the dual role of housing leverage in shaping entrepreneurship at the micro level. The descriptive statistics showed that entrepreneurs generally had stronger income, home equity, and non-housing asset positions than non-entrepreneurs. The distributional results showed that entrepreneurship was highest among moderate-leverage homeowners and lowest among highly leveraged and negative-equity homeowners. The regression models confirmed that higher loan-to-value ratios and greater mortgage payment burdens were associated with significantly lower odds of entrepreneurship, even after controlling for demographic characteristics, household income, education, assets, debt, and regional location. The

non-linear models further showed that moderate leverage may support entrepreneurship, whereas high leverage appears to suppress it. Finally, the robustness checks demonstrated that these findings remained stable across alternative model specifications and definitions of entrepreneurship. Therefore, the results indicate that housing leverage is neither uniformly beneficial nor uniformly harmful for entrepreneurial activity. Instead, its effect depends on the household's broader financial position: leverage can act as a catalyst when it is accompanied by sufficient equity and manageable repayment obligations, but it becomes a constraint when it erodes financial flexibility and increases household vulnerability.

4. Discussion and Conclusion

The present study examined whether housing leverage operates as a catalyst or constraint for entrepreneurship using micro-level evidence from the U.S. economy. The findings showed that entrepreneurs generally had stronger household balance-sheet positions than non-entrepreneurs, including higher household income, greater home equity, larger non-housing financial assets, and lower mortgage payment burden. Although entrepreneurs were more likely to be homeowners, the results indicated that homeownership alone was not sufficient to explain entrepreneurial participation. Rather, the quality of the homeowner's financial position was central. Entrepreneurs had lower loan-to-value ratios and higher home equity, suggesting that entrepreneurship was more closely associated with usable wealth and manageable debt exposure than with the mere possession of a housing asset. This finding aligns with the financial-constraint perspective, according to which entrepreneurial entry depends on the household's capacity to absorb risk, mobilize capital, and overcome credit-market imperfections [2, 3, 9]. It also supports the broader view that entrepreneurship is shaped by household-level financial resilience, not only by individual motivation, skills, or opportunity recognition [1, 23].

A key finding of the study was that the relationship between housing leverage and entrepreneurship was non-linear. Moderate-leverage homeowners showed the highest probability of entrepreneurship, while high-leverage and negative-equity homeowners showed the lowest probability. This pattern suggests that housing leverage may support entrepreneurship only when it is accompanied by sufficient home equity, credit access, and manageable repayment obligations. In this sense, moderate leverage may represent a financially active household position in which mortgage access signals creditworthiness and housing assets can be used as collateral. However, when leverage becomes excessive, the household's housing position shifts from an enabling asset base to a constraining debt burden. This result is consistent with prior studies showing that housing markets can have competing effects on entrepreneurship by expanding collateral values in some contexts while increasing financial pressure in others [5-7]. The finding also corresponds with recent evidence on housing debt and entrepreneurship, which indicates that debt can restrict entrepreneurial activity when it reduces financial flexibility and increases household vulnerability [8].

The logistic regression results further confirmed that higher loan-to-value ratios were significantly associated with lower odds of entrepreneurship, even after controlling for income, education, age, gender, marital status, non-housing financial assets, non-mortgage debt, urban location, and regional fixed effects. This indicates that housing leverage had an independent relationship with entrepreneurship beyond general socioeconomic status. The persistence of this effect after controls suggests that housing leverage is not simply a proxy for income or education; rather, it captures a distinct financial mechanism related to household debt exposure and equity availability. This supports studies emphasizing that financial frictions shape occupational choice and entrepreneurial entry by determining whether individuals can convert human capital and opportunity into business formation [3, 11]. The

finding is also compatible with research showing that regional financial development and banking conditions affect micro and small enterprises by influencing access to external capital [10]. In the U.S. context, where entrepreneurship often requires personal guarantees, credit history, and household-level financial support, housing leverage appears to be a meaningful determinant of entrepreneurial feasibility.

The positive association between home equity and entrepreneurship provides support for the collateral channel. Home equity may help households obtain credit, refinance debt, finance start-up costs, or tolerate short-term income volatility during the early stages of business formation. This is consistent with studies showing that housing-market gains can increase entrepreneurial participation by expanding household wealth and collateral capacity [5, 7]. It also aligns with research on household risky asset allocation, which suggests that entrepreneurial participation is linked to broader willingness and capacity to hold risk-bearing assets [15]. However, the present findings also show that home equity should not be interpreted as an unconditional entrepreneurial resource. Its effect depends on whether the household can access and use that equity without increasing financial fragility. Thus, the study contributes to the literature by showing that housing wealth and housing debt must be analyzed together. A household with high housing value but high mortgage debt may face more constraints than a household with moderate housing value but substantial equity.

Mortgage payment burden emerged as another important negative predictor of entrepreneurship. This finding suggests that monthly debt-service pressure may be more behaviorally restrictive than mortgage debt itself. Households with high mortgage payments relative to income may avoid entrepreneurship because business formation typically involves unstable earnings, uncertain cash flow, and delayed returns. This result is consistent with the view that entrepreneurial decisions are shaped not only by wealth stocks but also by liquidity flows and repayment obligations [13, 16]. It also reflects the broader importance of household income stability in entrepreneurial choice. Even when individuals possess education, experience, or business ideas, high fixed obligations may make self-employment too risky. This supports prior work emphasizing that financial-market frictions can reduce entrepreneurial performance and participation, particularly for groups with weaker access to flexible capital [17, 18].

The study also found that education, income, and non-housing assets were positively associated with entrepreneurship. These results are consistent with human-capital theory and with evidence that education enhances entrepreneurship by improving skills, opportunity recognition, and adaptive capacity [1]. They also support research showing that human capital and financial development interact in shaping firm-level and macroeconomic outcomes [2]. In practical terms, the findings imply that housing leverage is only one component of a broader entrepreneurial resource structure. Highly educated and higher-income households may be better able to transform housing wealth into entrepreneurial activity because they combine collateral capacity with managerial ability, market knowledge, and stronger financial buffers. Conversely, households with weaker income and asset positions may experience housing leverage primarily as a constraint. This interpretation is consistent with studies showing that inequality, wealth distribution, and financial access influence entrepreneurial opportunity [13, 14].

The results have important implications for understanding inequality in entrepreneurship. If entrepreneurship depends partly on home equity and manageable mortgage obligations, then unequal access to housing wealth may reproduce unequal access to business ownership. Households that have accumulated housing equity are better positioned to enter entrepreneurship, whereas households with high leverage, limited equity, or renting status face greater constraints. This mechanism may contribute to persistent disparities in entrepreneurial participation across class, race, gender, and region. The findings align with research showing that financial frictions can disadvantage

women-led ventures and that entrepreneurial narratives often overlook structural inequalities in race, class, and gender [17, 19]. They also correspond with studies on spatial inequality and migration, which show that housing conditions and urban opportunity structures shape economic mobility [12, 20]. Therefore, housing leverage should be viewed not only as a household-finance variable but also as a potential channel through which structural inequality affects entrepreneurship.

The regional dimension of the findings is also noteworthy. The relationship between leverage and entrepreneurship remained significant even after controlling for regional fixed effects and urban location, suggesting that the observed association was not merely the result of regional housing-market differences. Nevertheless, regional conditions likely shape how housing leverage affects households. In regions with strong housing appreciation, home equity may provide more entrepreneurial support; in high-cost regions, however, mortgage burdens may offset this advantage. This interpretation is consistent with work showing that house-price shocks can generate both positive and negative effects on regional entrepreneurship [7]. It also aligns with studies of urban regeneration, social entrepreneurship, and crowdfunding cities, which demonstrate that entrepreneurial activity is embedded in place-based economic and housing conditions [21, 22]. Thus, the same level of housing leverage may have different implications depending on local housing prices, labor markets, credit institutions, and business ecosystems.

The findings also contribute to the literature on institutional and policy determinants of entrepreneurship. Entrepreneurship is not merely an individual decision but is shaped by labor protections, financial systems, universities, innovation ecosystems, and public policy. The negative effect of excessive housing leverage suggests that households may be less likely to pursue entrepreneurship when the private cost of failure is high. This is consistent with research showing that legal and institutional conditions, such as workers' compensation laws, can influence entrepreneurial activity by changing the risk structure of employment and self-employment [4]. It also connects with research on entrepreneurial universities and academic start-up ecosystems, which shows that institutions can reduce barriers to entrepreneurship by providing knowledge, networks, legitimacy, and organizational support [23-25]. In this sense, policies that reduce financing frictions may weaken the dependence of entrepreneurship on personal housing wealth.

The findings further suggest that entrepreneurship should be understood as a household portfolio decision. Households allocate resources across housing, debt repayment, labor-market participation, financial assets, and business risk. When housing leverage is moderate, households may have sufficient confidence and collateral to assume entrepreneurial risk. When leverage is high, they may prioritize financial stability and mortgage repayment over uncertain business entry. This interpretation is consistent with research on entrepreneurial wealth, stock-market shocks, and household risky financial asset allocation [15, 16]. It also helps explain why homeownership alone was not enough to predict entrepreneurship. What matters is whether the household's portfolio position supports or restricts risk-taking.

Overall, the study provides evidence that housing leverage has a dual role in entrepreneurship. Moderate leverage may operate as a catalyst by reflecting credit access, asset ownership, and collateral capacity. High leverage, however, appears to operate as a constraint by increasing debt burden, reducing liquidity, and discouraging risk-taking. This finding supports and extends previous studies by showing that the housing-entrepreneurship relationship cannot be reduced to a simple positive effect of homeownership or housing wealth [5, 6, 8]. Instead, the entrepreneurial effect of housing depends on the balance between equity and debt. In the U.S.

economy, where household wealth and business formation are closely connected, housing leverage represents a critical micro-level mechanism through which financial capacity and entrepreneurial opportunity intersect.

The present study has several limitations. First, the study relied on observational micro-level data, and therefore the results should be interpreted as associations rather than definitive causal effects. Although the models controlled for several demographic, financial, and regional characteristics, unobserved factors such as entrepreneurial motivation, risk tolerance, family business background, credit history, and local lending relationships may still influence both housing leverage and entrepreneurship. Second, the measurement of entrepreneurship was based on reported self-employment, business ownership, or business income, which may not fully capture differences between necessity entrepreneurship, opportunity entrepreneurship, high-growth entrepreneurship, and part-time business activity. Third, housing values and mortgage balances were measured at the household level, and self-reported financial information may contain measurement error. Fourth, the study focused on the U.S. economy, which has a distinctive mortgage market, housing-finance system, and entrepreneurial ecosystem; therefore, the findings may not be directly generalizable to countries with different credit systems, welfare regimes, or housing institutions.

Future research should extend this study in several directions. Longitudinal studies are needed to examine how changes in home equity, mortgage refinancing, interest rates, and house-price shocks affect entrepreneurial entry and survival over time. Future research should also distinguish between different types of entrepreneurship, including incorporated business ownership, unincorporated self-employment, employer firms, non-employer firms, necessity entrepreneurship, opportunity entrepreneurship, and social entrepreneurship. Additional studies could examine whether the effect of housing leverage differs by gender, race, immigration status, age cohort, educational attainment, and metropolitan housing-market conditions. Future research should also investigate mechanisms more directly by including measures of credit access, loan denial, risk preferences, liquidity constraints, refinancing behavior, and household expectations. Comparative research across countries would also be valuable for determining whether the U.S. pattern is specific to its mortgage and credit institutions or reflects a broader relationship between household leverage and entrepreneurial activity.

The practical implication of this study is that policies designed to promote entrepreneurship should consider household balance-sheet conditions, not only business-level financing. Entrepreneurship support programs may be less effective when potential entrepreneurs are constrained by high mortgage burdens, limited home equity, and insufficient liquidity. Financial institutions, policymakers, and entrepreneurship-support organizations should develop financing instruments that reduce excessive dependence on personal housing collateral, particularly for households with viable business ideas but limited wealth. Programs such as credit guarantees, low-cost start-up loans, income-contingent repayment structures, targeted support for first-time entrepreneurs, and advisory services on household financial planning may help reduce the constraining effect of housing leverage. In practice, encouraging entrepreneurship requires more than promoting risk-taking; it requires reducing the private financial vulnerability that prevents capable individuals from entering business ownership.

Authors' Contributions

Authors equally contributed to this article.

Ethical Considerations

All procedures performed in this study were under the ethical standards.

Acknowledgments

Authors thank all participants who participate in this study.

Conflict of Interest

The authors report no conflict of interest.

Funding/Financial Support

According to the authors, this article has no financial support.

References

[1] K. Ahn and J. V. Winters, "Does Education Enhance Entrepreneurship?," *Small Business Economics,* vol. 61, no. 2, pp. 717-743, 2022, doi: 10.1007/s11187-022-00701-x.

[2] L. Allub, P. Gomes, and Z. Kuehn, "Human Capital and Financial Development: Firm-Level Interactions and Macroeconomic Implications," *The Economic Journal,* vol. 134, no. 659, pp. 934-958, 2023, doi: 10.1093/ej/uead098.

[3] R. Castro and P. Ševčík, "Occupational Choice, Human Capital and Financial Constraints," *Canadian Journal of Economics/Revue Canadienne D Économique,* vol. 57, no. 3, pp. 674-703, 2024, doi: 10.1111/caje.12721.

[4] I. Khurana, D. J. Lee, and J. O. D. Castro, "The Impact of Workers' Compensation Laws on Entrepreneurial Activity," *Strategic Entrepreneurship Journal,* vol. 20, no. 2, pp. 355-380, 2026, doi: 10.1002/sej.70017.

[5] J. G. d. Fonseca and P. Pannella, "The Housing Boom and Selection Into Entrepreneurship," 2022, doi: 10.2139/ssrn.4290294.

[6] B. Han, L. Han, and Z. Zhou, "Housing Market and Entrepreneurship: Micro Evidence From China," *SSRN Electronic Journal,* 2020, doi: 10.2139/ssrn.3676832.

[7] N. Kacher and L. Petach, "Boon or Burden? Evaluating the Competing Effects of House-Price Shocks on Regional Entrepreneurship," *Economic Development Quarterly,* vol. 35, no. 4, pp. 287-304, 2021, doi: 10.1177/08912424211041084.

[8] X. Yu, D. Hu, and M. Hu, "Unveiling the Impact of Housing Debt on Entrepreneurship: Evidence From China," *Asia & the Pacific Policy Studies,* vol. 11, no. 2, 2024, doi: 10.1002/app5.388.

[9] T. Cavalcanti, J. P. Kaboski, B. Martins, and C. Santos, "Dispersion in Financing Costs and Development," *SSRN Electronic Journal,* 2021, doi: 10.2139/ssrn.3819538.

[10] J. D. l. Cruz, "Regional Financial Development and Micro and Small Enterprises in Peru," 2024, doi: 10.18800/2079-8474.0532.

[11] Y. Timmer, N. Pierri, T. Ahnert, and S. Doerr, "Does IT Help? Information Technology in Banking and Entrepreneurship," *Imf Working Paper,* vol. 2021, no. 214, p. 1, 2021, doi: 10.5089/9781513591803.001.

[12] K. Turner, "United States : Good Ideas From Successful Cities : Regional Snapshots in Comparative Perspective," 2021, doi: 10.32920/17082365.

[13] C. Albert, A. Caggese, B. González, and V. Martin-Sanchez, "Income Inequality and Entrepreneurship: Lessons From the 2020 COVID-19 Recession," *Journal of Banking & Finance,* vol. 149, p. 106779, 2023, doi: 10.1016/j.jbankfin.2023.106779.

[14] Y. Jiang, Y. Zheng, and L. Zhu, "Unequal Transition: The Widening Wealth Gap Amidst China's Rapid Growth," *SSRN Electronic Journal,* 2023, doi: 10.2139/ssrn.4485013.

[15] L. Zhang, W. Zhang, and Y. Wang, "Entrepreneurial Participation Depth on Household Risky Financial Asset Allocation," *The Economics and Finance Letters,* vol. 10, no. 2, pp. 184-204, 2023, doi: 10.18488/29.v10i2.3408.

[16] M. A. K. Ring, "Entrepreneurial Wealth and Employment: Tracing Out the Effects of a Stock Market Crash," *The Journal of Finance,* vol. 78, no. 6, pp. 3343-3386, 2023, doi: 10.1111/jofi.13280.

[17] D. G. Ross and D. H. Shin, "Do Financial Market Frictions Hurt the Performance Of <scp>women-led</Scp> Ventures? A <scp>meta-analytic</Scp> Investigation," *Strategic Management Journal,* vol. 45, no. 3, pp. 507-534, 2023, doi: 10.1002/smj.3553.

[18] S. T. Howell and R. Nanda, "Networking Frictions in Venture Capital, and the Gender Gap in Entrepreneurship," *Journal of Financial and Quantitative Analysis,* vol. 59, no. 6, pp. 2733-2761, 2023, doi: 10.1017/s0022109023000819.

[19] H. L. Schachter, "Race, Class, Gender and Social Entrepreneurship: Extending the Positionality of Icons," *Journal of Management History,* vol. 28, no. 4, pp. 476-490, 2022, doi: 10.1108/jmh-11-2021-0059.

[20] E. L. Ewing, S. Krishnan, and B. Lawrence, "“No Future for Black People in Chicago”: Out-Migration as Slow-Motion Disaster," *Socius Sociological Research for a Dynamic World,* vol. 10, 2024, doi: 10.1177/23780231241266511.
[21] X. Tan, "Alternative Micro-Regeneration Strategies for Urban Villages in China? Social Entrepreneurship-Based Artistic Intervention in Aohu Village in Shenzhen," *Transactions in Planning and Urban Research,* vol. 3, no. 4, pp. 364-383, 2024, doi: 10.1177/27541223241289954.
[22] P. Langley, S. Lewis, C. McFarlane, J. Painter, and A. Vradis, "Crowdfunding Cities: Social Entrepreneurship, Speculation and Solidarity in Berlin," *Geoforum,* vol. 115, pp. 11-20, 2020, doi: 10.1016/j.geoforum.2020.06.014.
[23] C. E. Eesley and Y. S. Lee, "Do University Entrepreneurship Programs Promote Entrepreneurship?," *Strategic Management Journal,* vol. 42, no. 4, pp. 833-861, 2020, doi: 10.1002/smj.3246.
[24] H. Etzkowitz, "Entrepreneurial University Icon: Stanford and Silicon Valley as Innovation and Natural Ecosystem," *Industry and Higher Education,* vol. 36, no. 4, pp. 361-380, 2022, doi: 10.1177/09504222221109504.
[25] A. Bell, A. Bollfrass, M. Giannone, A. Nehrbass, T. Valley, and D. Wolf, "The Scholar-Entrepreneurial Organization: Lessons in Building an Academic Startup," *Negotiation Journal,* vol. 38, no. 1, pp. 69-92, 2022, doi: 10.1111/nejo.12383.
[26] G. Fleming and C. Doyle, "The Big Picture: Trends From the Academic Business Library Directors' Year in Review Reports 2018-2019," *Ticker the Academic Business Librarianship Review,* vol. 4, no. 2, 2020, doi: 10.3998/ticker.16481003.0004.202.
[27] P. E. Petrakis and P. C. Kostis, "Policies for Dynamic Economic Growth: Medium- And Long-Term Policies," pp. 79-98, 2020, doi: 10.1007/978-3-030-47079-1_6.
[28] C. Calderón, "Boosting Productivity in Sub-Saharan Africa: Policies and Institutions to Promote Efficiency," 2021, doi: 10.1596/978-1-4648-1550-8.
[29] A. Guarín, J. Londoño-Vélez, and C. Posso, "Reparations as Development? Evidence From Victims of the Colombian Armed Conflict," 2023, doi: 10.32468/be.1236.
[30] D. Mitsi, "Ageing and Economic Growth: A Literature Review," *International Journal of Science and Management Studies (Ijsms),* pp. 47-61, 2023, doi: 10.51386/25815946/ijsms-v6i4p108.