International Journal of Education, Culture and Society
2025, Vol. 10, No. 5, pp. 254-273
https://doi.org/10.11648/j.ijecs.20251005.12

Research Article

Delayed Dreams: How Student Loan Debt Shapes Family Formation and Homeownership Among Liberal Arts Graduates

Osasohan Agbonlahor*

Department of Leadership Studies and Adult Education, North Carolina Agricultural and Technical State University, Greensboro, United States

Abstract

This study examines how educational debt burden influences homeownership and family formation outcomes among college graduates, with particular attention to differences between liberal arts and other disciplines. Drawing on data from the College and Beyond II dataset, which tracks long-term outcomes of higher education, the analysis examines how varying levels of student debt burden and debt-to-income ratios affect the likelihood of homeownership, marriage, and having children. Using logistic regression models with a sample of 1,673 college graduates, the findings show that student loan debt significantly reduces the probability of homeownership across all graduates, with even low debt burden associated with approximately 50% lower odds compared to those without loans. The relationship between debt and family formation outcomes is more complex, with low debt burden showing significant negative associations with marriage but high debt burden having inconsistent effects. Liberal arts graduates face additional challenges, showing lower overall rates of homeownership and marriage compared to professional program graduates, though they demonstrate greater resilience to the negative effects of moderate debt burden on marriage decisions. The results highlight how financial constraints early in adulthood can have lasting consequences for major life transitions. These findings reveal that student loan debt operates as a mechanism of social stratification with differential impacts across academic disciplines and racial groups, carrying immediate implications for educational financing policy and institutional support strategies.

Keywords

Liberal Arts Education, Student Loan Debt, Young Adults, Homeownership, Family Formation, Life Course Transitions, Higher Education

1. Introduction

Student loan debt has emerged as a defining financial challenge for college graduates in the United States, with total outstanding student loans surpassing $1.7 trillion [17]. This unprecedented debt burden coincides with significant changes in the timing and attainment of traditional adult milestones, particularly homeownership and family formation. Young adults today are purchasing homes, getting married, and having children later than previous generations, with financial

*Corresponding author: oagbonlahor@ncat.edu (Osasohan Agbonlahor)

Received: 25 July 2025; **Accepted:** 11 August 2025; **Published:** 11 September 2025

constraints frequently cited as a key factor in these delays [18]. While research has examined various causes of these shifting life patterns, the role of student loan debt, particularly its differential impact across educational backgrounds, remains incompletely understood.

Liberal arts graduates represent a particularly interesting case within this broader phenomenon. These graduates often face a distinct combination of challenges: moderate to high student debt levels coupled with earnings trajectories that may differ from graduates in professional or STEM fields [2, 3]. This potential mismatch between debt burden and income-generating capacity raises questions about whether student loan debt might affect liberal arts graduates differently than their peers from other disciplines when it comes to achieving traditional adult milestones. Despite the significance of this question for understanding social stratification and the evolving value proposition of different educational pathways, limited research has directly compared how student debt shapes post-college life transitions across different academic disciplines.

This study addresses this gap by examining how student loan debt affects homeownership and family formation outcomes among college graduates, with particular attention to potential differences between liberal arts graduates and those from other academic fields. By focusing on both homeownership and family formation simultaneously, this study captures two distinct yet interconnected dimensions of the transition to adulthood that may be shaped by early financial constraints. The former represents a significant financial investment requiring substantial resources and creditworthiness, while the latter encompasses key relational milestones that may be influenced by both financial and non-financial considerations.

The theoretical framing for this study integrates perspectives from life course theory, human capital theory, and financial strain approaches. Life course theory emphasizes how events at one life stage can have lasting consequences for subsequent outcomes, with particular attention to the timing and sequencing of major life transitions [16]. Student loan debt represents an early adult financial constraint that may alter the normative progression through traditional adult milestones. Human capital theory conceptualizes education as an investment in future productivity and earnings [6], but this framework requires extension to account for differential returns across academic disciplines. Financial strain perspectives add further nuance by considering how debt operates as both an objective financial constraint and a subjective psychological stressor [14], potentially affecting major life decisions through multiple pathways.

The study builds on prior research demonstrating negative associations between student loan debt and both homeownership [25, 21, 22] and marriage timing [1, 7]. However, it extends this literature in three key ways. First, by examining both homeownership and family formation simultaneously, this research captures potential interdependencies between these outcomes that may be jointly affected by financial constraints. Second, by directly comparing liberal arts graduates with those from other fields, this research examines whether the consequences of student debt for life milestones differ by academic background. Third, by considering both absolute debt burden and debt-to-income ratios, this study provides a more nuanced understanding of how financial strain relative to resources might shape post-college trajectories. This research addresses three specific questions:

1. How does student loan debt affect homeownership acquisition among college graduates?
2. What is the relationship between student loan debt and family formation outcomes, specifically marriage and having children?
3. Do these relationships differ significantly for liberal arts graduates compared to graduates from other disciplines?

2. Literature Review

The transition to adulthood in the United States has undergone significant transformation in recent decades, with young adults delaying or forgoing traditional milestones like homeownership, marriage, and childbearing [8, 15, 19, 30]. This shift has coincided with dramatic increases in both college attendance and educational debt financing. The average undergraduate now graduates with approximately $30,000 in student loan debt, representing a substantial financial obligation at the outset of adult life [23]. Understanding how this debt burden influences subsequent life course transitions has become increasingly important for scholars across disciplines.

Research on the consequences of student loan debt has expanded considerably, with studies examining effects on career choices [29], financial wellbeing [13], and psychological outcomes [33]. However, the impact of educational debt on major life milestones, particularly homeownership and family formation, has received growing attention as scholars recognize these as critical dimensions of the transition to adulthood potentially constrained by early financial obligations.

Homeownership has traditionally represented a significant milestone in the transition to adulthood and a primary mechanism for wealth accumulation in the United States. Recent research has documented declining homeownership rates among younger adults, with student loan debt identified as a potential contributing factor [22, 25]. Several pathways may connect student debt to reduced homeownership. Most directly, monthly student loan payments reduce disposable income available for mortgage payments and saving for down payments. Additionally, student debt may affect debt-to-income ratios considered in mortgage qualification processes, potentially limiting borrowing capacity [25].

Empirical evidence largely supports a negative relationship between student loan debt and homeownership, though with some nuance. Using data from the National Longitudinal Survey of Youth 1997 cohort, Houle and Berger [22] found

that each $10,000 in student loan debt was associated with a 0.8 percentage point decrease in the probability of homeownership, though the authors considered this association to be modest in size and likely driven by selection effects rather than a causal relationship. Similarly, Mezza et al. [25] employed a quasi-experimental approach using credit bureau data to show that a $1,000 increase in student loan debt resulted in a decrease of approximately 1.8 percentage points in the homeownership rate for public university graduates in their mid-20s. These effects are particularly pronounced for recent cohorts of graduates who entered the labor market during periods of economic uncertainty.

However, research has also noted heterogeneity in these effects. Cooper and Wang [10] found that the negative association between student debt and homeownership was strongest among younger households, with individuals aged 20-24 showing a 9-percentage point gap in homeownership rates compared to those without student debt, while this gap narrowed considerably for older age groups. However, Houle and Berger [22] found no consistent evidence for variation by socioeconomic background, reporting that educational debt had a similar association with homeownership across various socioeconomically defined population groups and did not disproportionately limit homeownership among disadvantaged groups. Less attention has been paid to potential variation across academic disciplines, though differential earnings trajectories across majors suggest that such variation may exist [9].

Research on student loan debt and family formation has produced more mixed results than the homeownership literature. Both theoretical arguments and empirical findings suggest complex relationships between educational debt and decisions about marriage and childbearing. Regarding marriage, competing hypotheses exist. Financial constraints from student loan debt might delay marriage as individuals prioritize debt repayment before taking on additional financial commitments [7]. Alternatively, marriage might represent a strategic response to financial challenges, potentially providing economies of scale in living arrangements or access to partner resources that facilitate debt management [1, 20].

Few studies have explicitly examined whether these relationships differ across academic disciplines. Given documented differences in earnings trajectories and debt levels across majors [9], liberal arts graduates may experience distinct constraints on family formation decisions relative to peers from professional or STEM fields. This represents a significant gap in current understanding of how educational debt shapes the transition to adulthood.

The value proposition of liberal arts education has been increasingly scrutinized in public discourse, with particular concern about the economic returns to these degrees relative to their costs [12]. Research confirms that graduates from humanities and social science fields typically earn less than peers from professional or STEM programs, especially in early career stages [9]. However, longitudinal studies suggest that earnings gaps may narrow over time as liberal arts graduates develop career paths that leverage their broadly transferable skills [12].

Beyond earnings, research on other outcomes for liberal arts graduates presents a complex picture. Some studies highlight advantages in critical thinking skills, adaptability, and career satisfaction [5], while others note challenges in initial labor market transitions and credential recognition [28, 2]. However, relatively little research has specifically examined how the combination of potentially lower initial earnings and student debt burden affects major life transitions for liberal arts graduates compared to peers from other disciplines.

This knowledge gap is particularly significant given current debates about educational investment choices and returns. If student loan debt disproportionately constrains post-college life options for liberal arts graduates, this would have implications for understanding the full costs and benefits of different educational pathways. Alternatively, if liberal arts graduates show distinct patterns of resilience or adaptation to debt burden, this would provide a more nuanced picture of how different types of human capital development interact with financial constraints to shape life trajectories.

While much research has focused on absolute debt amounts, growing evidence suggests that the relationship between debt and income may be more instructive for understanding constraints on major life decisions. Financial strain theory emphasizes that the burden of debt is relative to available resources, with the same absolute debt amount potentially representing vastly different constraints depending on income level [14]. In mortgage qualification processes, debt-to-income ratios often serve as key criteria, making this metric particularly relevant for homeownership outcomes. However, few studies have systematically examined whether the effects of these ratios differ across academic disciplines or how they relate to family formation outcomes [33, 32, 24].

Despite growing research on student loan debt and post-college outcomes, several important gaps remain. First, most studies examine homeownership and family formation outcomes separately, despite theoretical reasons to expect interdependence between these transitions. Second, limited attention has been paid to whether the effects of student debt vary meaningfully across academic disciplines, despite substantial variation in early career earnings and accumulated debt. Third, many studies focus on absolute debt amounts rather than debt relative to income, potentially obscuring important variation in the actual financial strain experienced by graduates.

The present study addresses these gaps by: (1) examining both homeownership and family formation outcomes simultaneously; (2) directly comparing patterns between liberal arts graduates and those from other disciplines; (3) considering both absolute debt burden and debt-to-income ratios; and (4) utilizing alumni survey data collected more than a decade after graduation. This approach allows for a more comprehensive understanding of how student loan debt shapes major

life transitions in early to mid-adulthood, with particular attention to potential differences across educational backgrounds.

3. Theoretical Perspectives

This study is grounded in an integrated theoretical framework that combines life course theory with economic perspectives on educational investment and financial constraints. Life course theory provides a valuable lens for understanding how student loan debt influences post-college transitions into adulthood [16]. This theory emphasizes that individuals' lives unfold through a series of transitions and trajectories, with events at one life stage potentially having lasting consequences for subsequent outcomes. The transition to adulthood represents a particularly critical period characterized by multiple interrelated milestones, including completing education, establishing financial independence, securing stable employment, forming romantic partnerships, purchasing homes, and having children [31].

In contemporary society, these traditional markers of adulthood have become increasingly delayed and destandardized [19], with college graduates in particular experiencing different pathways and timelines than previous generations. Student loan debt represents a significant financial constraint that may alter both the timing and achievement of traditional adult milestones. By examining homeownership acquisition and family formation through this theoretical lens, we can better understand how financial obligations stemming from higher education affect the normative sequencing and accomplishment of life transitions.

Life course theory further emphasizes the importance of historical and social context in shaping individual trajectories. The contemporary context of rising higher education costs, stagnant wages for new graduates, volatile housing markets, and changing norms around marriage and childbearing creates a unique environment within which today's college graduates navigate their early adult years. The theory's emphasis on "linked lives" is also relevant, as debt not only affects individual decision-making but potentially shapes relationship formation and stability, which in turn influences further life course decisions [30].

Complementing this life course perspective, this study draws on human capital theory from economics to conceptualize education as an investment intended to enhance productivity and future earnings [6]. According to this framework, individuals take on student debt as a rational investment decision, anticipating that the returns to education (enhanced earnings potential) will outweigh the costs (including loan repayment). However, this theory requires extension to account for differential returns across academic disciplines. Liberal arts graduates may experience different earnings trajectories than peers from professional or STEM programs, potentially altering the cost-benefit calculation of educational debt and subsequent life milestone achievement.

The human capital perspective also helps explain why graduates might prioritize certain life milestones over others when facing financial constraints. If loan repayment reduces disposable income, graduates may strategically delay high-cost investments like homeownership while potentially pursuing relatively less financially intensive milestones like marriage. This approach acknowledges that individuals make rational choices within constraints, with debt burden representing a significant constraint on post-college decision-making.

Beyond traditional human capital theory, financial strain perspectives offer additional insight into how debt affects life transitions. This approach conceptualizes student loan debt as both an objective financial constraint that reduces available resources and a subjective stressor that creates psychological burden and uncertainty [14]. The dual nature of debt burden helps explain why the debt-to-income ratio might be a more powerful predictor of life outcomes than absolute debt amounts. Even moderate debt can create significant strain when income is limited, while higher absolute debt might be manageable with proportionately higher income.

The financial strain perspective also accounts for how debt might differentially affect various life decisions. Homeownership requires substantial financial resources (down payment, creditworthiness), making it particularly vulnerable to debt constraints. Family formation decisions, especially marriage, involve both financial and non-financial considerations, potentially explaining the more complex relationship between debt and marriage outcomes observed in previous research [1]. This theoretical approach suggests that the psychological burden of debt may be as important as the objective financial constraint in shaping major life decisions.

Status attainment and social reproduction theories provide an additional theoretical dimension. These frameworks suggest that educational debt may function as a mechanism through which socioeconomic inequality is perpetuated across generations [21]. When graduates begin their careers with substantial debt burdens, their ability to accumulate wealth and achieve traditional middle-class milestones may be compromised, particularly for those from less advantaged backgrounds or those pursuing less lucrative career paths. This perspective helps contextualize potential racial/ethnic disparities in homeownership and family formation, as well as differences between liberal arts graduates and those from other fields.

Integrating these theoretical perspectives provides a comprehensive framework for understanding my research questions. Student loan debt can be conceptualized as an early adult financial constraint that influences subsequent life course transitions through multiple mechanisms: direct resource constraints that limit financial capacity for major investments; extended financial obligation periods that create uncertainty about future resource availability; psychological strain that affects risk tolerance and long-term planning; and potential amplification of existing social inequalities through

differential impacts across demographic groups and academic disciplines.

This multidisciplinary approach acknowledges that the relationship between student debt and adult milestones involves complex interactions between individual decision-making, structural constraints, and social context. This integrative framework provides insight not only into whether debt affects homeownership and family formation, but also into the mechanisms through which these effects operate and the conditions under which they may be amplified or attenuated.

4. Materials and Methods

This research utilizes data from the College and Beyond II (CBII) study, an extensive longitudinal investigation examining post-graduation outcomes across multiple cohorts of college students [11]. CBII represents a unique resource for analyzing the relationship between educational financing and life course transitions, offering comprehensive information on both borrowing patterns and subsequent adult milestones among a diverse population of graduates. The study encompasses administrative records from 19 public universities, following degree-seeking students who matriculated from 2000 through 2021 across their educational and post-graduation trajectories.

The distinctive strength of CBII for this investigation lies in its comprehensive alumni follow-up surveys administered over a decade post-graduation. These surveys enable examination of how financial obligations incurred during college, specifically student loan debt, shape critical life transitions during the prime years for establishing independence, forming families, and making major financial commitments. Key variables captured in the alumni surveys include relationship status and fertility decisions, homeownership and mortgage acquisition, career progression, and detailed financial profiles including ongoing educational debt obligations. Additionally, the dataset contains extensive background information on participants' undergraduate experiences, academic pathways, campus involvement, and educational financing strategies. This analysis focuses on the alumni survey data within CBII, which documents graduates' contemporary life circumstances across multiple domains, including ongoing student loan debt payments, marital and parental status, and homeownership status.

The analysis sample includes 1,673 college graduates with complete information on key variables. For the liberal arts subsample analyses, I use 1,059 graduates who majored in arts and humanities or social sciences. The sample was cleaned to address missing data patterns, with individuals who had incomplete information on key outcome variables being excluded from the analysis. This approach helps ensure the validity of findings though it may introduce some selection bias if there are systematic differences between those with complete and incomplete data. The final working samples provide sufficient statistical power to detect meaningful relationships between student debt and life outcomes.

The key dependent variables include homeownership (a binary indicator of whether the respondent owns their home), mortgage status (whether they have a mortgage), marriage status (whether they are currently married), and parental status (whether they have children). These outcomes represent important life milestones that may be influenced by financial constraints imposed by student loan debt.

The primary independent variables in this study measure student loan debt burden using two different approaches. First, a categorical loan burden variable classifies graduates into four groups: No loans, Low burden (monthly payments ≤$200), Medium burden (payments $201-$500), and High burden (payments >$500). Second, I created a debt-to-income ratio variable by dividing annual loan payment amounts by reported income. This continuous measure was further categorized into: No debt, ≤5%, 5-10%, 10-15%, and >15% of income going toward student loan payments. The debt-to-income ratio provides a more standardized measure of financial strain that accounts for differences in earning potential across graduates.

Control variables included in the analysis account for demographic characteristics and other factors known to influence homeownership and family formation. These include race/ethnicity (recoded into five categories: White, Black, Asian, Hispanic, and Other), gender (recoded as Man, Woman, or Non-binary/Other, with a binary version created for interaction analyses), parental education (whether parents have a bachelor's degree or higher), socioeconomic background (whether from a low-income or working-class background), English as primary home language, advanced degree attainment, employment status, leadership experience (count of leadership positions held), and service orientation (participation in service activities). For the full sample analyses, major field was also included as a control variable, categorized as Professional, Arts and Humanities, Social Sciences, or STEM.

To examine the relationship between student loan debt and post-college outcomes, I employed a series of regression models. For binary outcomes (homeownership, mortgage status, marriage, and having children), I used logistic regression models, which are appropriate for dichotomous dependent variables. The models estimate the log-odds of experiencing the outcome of interest as a function of student loan debt and control variables. The results are presented as odds ratios, which indicate how the odds of the outcome change with a unit increase in the predictor variable, holding other factors constant.

I conducted analyses in several stages. First, I examined descriptive statistics to understand patterns in the data, including cross-tabulations of outcomes by debt burden categories. Next, I estimated regression models for the full sample to assess the overall relationships between student debt measures and life outcomes. I then conducted parallel analyses for the liberal arts graduate subsample to determine whether the patterns differed for this population. To formally

test for differential effects by major, I estimated models with interaction terms between student debt measures and a liberal arts indicator variable. Additional interaction models examined whether the effects of student debt varied by gender.

For all regression models, I included relevant control variables to account for potential confounding factors. Standard errors were calculated to determine the statistical significance of the observed relationships. Statistical significance was assessed at conventional levels ($p < 0.10$, $p < 0.05$, and $p < 0.001$). The regression models take the general form:

$$\log(p/(1-p)) = \beta_0 + \beta_1 DebtMeasure + \beta_2 X + \varepsilon$$

Where p is the probability of the outcome (e.g., homeownership), DebtMeasure is the student loan debt indicator (either categorical debt burden or debt-to-income ratio), X represents the vector of control variables, and ε is the error term. For interaction models, I included product terms between debt measures and either the liberal arts indicator or gender.

To aid in interpretation of results, I calculated predicted probabilities for key outcomes across different debt burden categories, holding other variables at their means or reference categories. These predicted probabilities provide a more intuitive understanding of the magnitude of the debt effects.

5. Results

Descriptive statistics reveal notable differences in homeownership and family formation outcomes by student loan debt burden. As shown in Table 1 and Table 2, among all graduates, 63.0% owned homes, with significant variation by debt burden: 71.7% of those with no student loans owned homes, compared to 50.2% of those with low debt burden, 59.2% with medium burden, and 55.0% with high burden. Similarly, 73.0% of all graduates were married, with the highest marriage rate among those with no loans (76.8%) and high debt burden (76.4%), and lower rates among those with low (61.7%) and medium (68.7%) debt burden. For having children, 44.5% of graduates had children, with rates declining as debt burden increased: 48.9% for no loans, 42.8% for low burden, 40.4% for medium burden, and 39.1% for high burden.

Among liberal arts graduates specifically, similar patterns emerged. Homeownership was highest among those with no student loans (68.1%) compared to those with low (47.3%), medium (57.8%), and high (52.6%) debt burden. Marriage rates for liberal arts graduates followed a U-shaped pattern by debt burden: 74.2% for no loans, 58.6% for low burden, 70.4% for medium burden, and 75.3% for high burden. The percentage having children decreased with debt burden: 46.1% for no loans, 42.0% for low burden, 39.5% for medium burden, and 33.7% for high burden.

When examining patterns by debt-to-income ratio, similar variations were observed. Liberal arts graduates with debt-to-income ratios exceeding 15% showed notably lower homeownership rates (50.5%) compared to those with no debt (68.1%). Marriage rates were highest among those with debt-to-income ratios of 10-15% (76.3%) and lowest among those with ratios of 5% or less (64.1%). The percentage having children was lowest among those with debt-to-income ratios of 10-15% (30.5%).

Table 1. *Descriptive Statistics for Homeownership and Family Formation.*

Variable	Mean	SD	Min	Max	N
Housing					
Homeowner	0.630	0.483	0	1	1,673
Has mortgage	0.584	0.493	0	1	1,673
Family Formation					
Married	0.730	0.444	0	1	1,673
Has children	0.445	0.497	0	1	1,673
Demographics					
Currently employed	0.935	0.246	0	1	1,673
Has advanced degree	0.562	0.496	0	1	1,673
Parents have bachelor's+	0.625	0.484	0	1	1,673
Low-income background	0.374	0.484	0	1	1,673
English primary language	0.852	0.355	0	1	1,673
Gender					

Variable	Mean	SD	Min	Max	N
Man	0.412	0.492	0	1	1,673
Woman	0.579	0.494	0	1	1,673
Non-binary/Other	0.009	0.094	0	1	1,673
Race/Ethnicity					
White	0.619	0.486	0	1	1,673
Black	0.125	0.331	0	1	1,673
Asian	0.072	0.258	0	1	1,673
Hispanic	0.133	0.339	0	1	1,673
Other	0.051	0.221	0	1	1,673
Debt					
No loans	0.472	0.499	0	1	1,673
Low debt burden	0.145	0.352	0	1	1,673
Medium debt burden	0.191	0.393	0	1	1,673
High debt burden	0.192	0.394	0	1	1,673
Annual debt payments to income ratio	23.081	553.805	0	-	1,512

Note: Data from sample of 1,673 respondents. Binary variables are coded as 0/1.

Table 2. *Descriptive Statistics by Student Loan Debt Burden.*

	Full Sample					Liberal Arts Graduates				
	Total	No loans	Low	Medium	High	Total	No loans	Low	Medium	High
Homeownership and Family Outcomes										
Homeowner	0.630	0.717	0.502	0.592	0.550	0.599	0.681	0.473	0.578	0.526
	(0.483)	(0.451)	(0.501)	(0.492)	(0.498)	(0.490)	(0.466)	(0.501)	(0.495)	(0.501)
Has mortgage	0.584	0.590	0.486	0.562	0.581	0.558	0.582	0.432	0.538	0.542
	(0.493)	(0.492)	(0.501)	(0.497)	(0.494)	(0.497)	(0.494)	(0.497)	(0.500)	(0.499)
Married	0.730	0.768	0.617	0.687	0.764	0.711	0.742	0.586	0.704	0.753
	(0.444)	(0.422)	(0.487)	(0.465)	(0.425)	(0.453)	(0.438)	(0.494)	(0.458)	(0.433)
Has children	0.445	0.489	0.428	0.404	0.391	0.418	0.461	0.420	0.395	0.337
	(0.497)	(0.500)	(0.496)	(0.492)	(0.489)	(0.494)	(0.499)	(0.495)	(0.490)	(0.474)
Demographic Characteristics										
Parents have bachelor's or higher	0.625	0.643	0.609	0.577	0.643	0.619	0.631	0.609	0.561	0.668
	(0.484)	(0.480)	(0.489)	(0.495)	(0.480)	(0.486)	(0.483)	(0.489)	(0.497)	(0.472)
Low-income background	0.374	0.336	0.449	0.455	0.332	0.398	0.352	0.450	0.502	0.342
	(0.484)	(0.473)	(0.498)	(0.499)	(0.472)	(0.490)	(0.478)	(0.499)	(0.501)	(0.476)
English primary lan-	0.852	0.853	0.844	0.862	0.845	0.853	0.847	0.822	0.857	0.889

	Full Sample					Liberal Arts Graduates				
	Total	**No loans**	**Low**	**Medium**	**High**	**Total**	**No loans**	**Low**	**Medium**	**High**
guage	(0.355)	(0.354)	(0.364)	(0.345)	(0.363)	(0.355)	(0.360)	(0.383)	(0.351)	(0.314)
Has advanced degree	0.562	0.460	0.473	0.636	0.804	0.558	0.465	0.473	0.637	0.774
	(0.496)	(0.499)	(0.500)	(0.482)	(0.397)	(0.497)	(0.499)	(0.501)	(0.482)	(0.420)
Currently employed	0.935	0.930	0.909	0.940	0.963	0.933	0.920	0.911	0.946	0.968
	(0.246)	(0.255)	(0.288)	(0.237)	(0.190)	(0.250)	(0.271)	(0.285)	(0.226)	(0.175)
Annual debt-to-income ratio	23.081	0.000	0.193	17.081	101.311	6.099	0.000	0.183	23.284	5.729
	(553.805)	(0.000)	(1.477)	(281.399)	(1220.783)	(156.683)	(0.000)	(1.488)	(333.616)	(55.162)
N	1,673	789	243	319	322	1,059	477	169	223	190

Note: Values represent means with standard deviations in parentheses. Low debt burden = monthly payments ≤$200; Medium = $201-$500; High = >$500.

5.1. Effects of Student Loan Debt on Homeownership

Logistic regression results for the full sample indicate that student loan debt significantly reduces the probability of homeownership, even after controlling for demographic characteristics and other factors. As shown in Table 3, using the categorical debt burden measure, graduates with low debt burden had 49.8% lower odds of homeownership compared to those with no loans (OR = 0.502, $p < 0.001$). Those with medium debt burden had 32.6% lower odds (OR = 0.674, $p < 0.01$), and those with high debt burden had 54.1% lower odds (OR = 0.459, $p < 0.001$) of homeownership relative to graduates without student loans.

When using debt-to-income ratio categories, similar patterns emerged. Graduates with debt-to-income ratios of 5% or less had 45.7% lower odds of homeownership (OR = 0.543, $p < 0.001$), those with ratios of 5-10% had 48.5% lower odds (OR = 0.515, $p < 0.001$), and those with ratios exceeding 15% had 53.2% lower odds (OR = 0.468, $p < 0.001$) compared to those with no debt. Interestingly, graduates with debt-to-income ratios of 10-15% did not show significantly different homeownership rates from those with no debt, suggesting a non-linear relationship between debt burden and homeownership.

For liberal arts graduates specifically, the negative relationship between student debt and homeownership persisted. As shown in Table 4, those with low debt burden had 48.8% lower odds of homeownership (OR = 0.512, $p < 0.01$), those with medium debt burden had 34.0% lower odds (OR = 0.660, $p < 0.05$), and those with high debt burden had 50.2% lower odds (OR = 0.498, $p < 0.001$) compared to liberal arts graduates without loans. Similarly, when using debt-to-income ratio categories as shown in Table 7, liberal arts graduates with ratios of 5% or less had 44.6% lower odds (OR = 0.554, $p < 0.001$), those with ratios of 5-10% had 50.1% lower odds (OR = 0.499, $p < 0.001$), and those with ratios exceeding 15% had 51.8% lower odds (OR = 0.482, $p < 0.001$) of homeownership compared to those without debt.

The effect of student loan debt on having a mortgage followed similar patterns to homeownership, though with somewhat smaller effect sizes. For the full sample, as shown in Table 3, graduates with low debt burden had 31.1% lower odds (OR = 0.689, $p < 0.05$) of having a mortgage compared to those without student loans. Those with medium debt burden showed no statistically significant difference from those without loans (OR = 0.856, $p > 0.10$). Graduates with high debt burden had 34.0% lower odds (OR = 0.660, $p < 0.05$) of having a mortgage compared to those without student loans. Among liberal arts graduates, as shown in Table 4, those with low debt burden had 35.1% lower odds (OR = 0.649, $p < 0.05$) of having a mortgage compared to those without loans. Those with medium debt burden showed no statistically significant difference (OR = 0.785, $p > 0.10$), while those with high debt burden had 35.5% lower odds (OR = 0.645, $p < 0.05$) of having a mortgage compared to those without loans.

Interaction models testing whether the effect of student loan debt on homeownership differed by major field did not show statistically significant differences between liberal arts graduates and others. As shown in Table 9, the interaction terms between debt burden categories and the liberal arts indicator were not statistically significant, suggesting that while liberal arts graduates have lower overall homeownership rates, the negative effect of student debt on homeownership is similar across major fields.

Table 3. Logistic Regression Results for Homeownership Outcomes - Full Sample.

Variable	Model 1: Homeownership	Model 2: Has Mortgage
Debt Burden (ref: No loans)		
Low	0.502*** (0.089)	0.689** (0.119)
Medium	0.674** (0.110)	0.856 (0.135)
High	0.459*** (0.076)	0.660** (0.106)
Race/Ethnicity (ref: White)		
Black	0.430*** (0.082)	0.428*** (0.080)
Asian	0.508** (0.128)	0.357*** (0.090)
Hispanic	0.654** (0.135)	0.629** (0.125)
Other	0.721 (0.193)	0.640* (0.165)
Gender (ref: Man)		
Woman	1.123 (0.141)	1.096 (0.133)
Non-binary/Other	0.451 (0.314)	0.525 (0.357)
Family Status		
Married (1=yes)	4.175*** (0.576)	4.047*** (0.558)
Has children (1=yes)	3.435*** (0.467)	2.787*** (0.354)
Background		
Parents have bachelor's (1=yes)	0.884 (0.126)	0.839 (0.114)
Low-income background (1=yes)	0.957 (0.137)	0.904 (0.124)
English primary language (1=yes)	1.519** (0.311)	1.340 (0.268)
Education and Employment		
Has advanced degree (1=yes)	1.013 (0.134)	0.973 (0.123)
Currently employed (1=yes)	1.426 (0.354)	1.718** (0.409)
Number of leadership positions	0.984 (0.058)	1.008 (0.057)
Service-oriented (1=yes)	1.181 (0.156)	1.247* (0.157)
Major (ref: Professional)		
Arts and Humanities	0.535** (0.116)	0.607** (0.123)
Social Sciences	0.799 (0.165)	0.871 (0.168)
STEM	0.826 (0.183)	0.848 (0.176)
Constant	0.449** (0.186)	0.305** (0.123)
N	1,673	1,673
Pseudo R^2	0.220	0.190

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

Table 4. Logistic Regression Results for Homeownership Outcomes - Liberal Arts Graduates.

Variable	Model 1: Homeownership	Model 2: Has Mortgage
Debt Burden (ref: No loans)		

Variable	Model 1: Homeownership	Model 2: Has Mortgage
Low	0.512** (0.111)	0.649** (0.137)
Medium	0.660** (0.131)	0.785 (0.151)
High	0.498*** (0.106)	0.645** (0.133)
Race/Ethnicity (ref: White)		
Black	0.396*** (0.091)	0.390*** (0.089)
Asian	0.456* (0.156)	0.329*** (0.114)
Hispanic	0.699 (0.180)	0.601* (0.150)
Other	1.001 (0.318)	0.888 (0.272)
Gender (ref: Man)		
Woman	1.197 (0.184)	1.141 (0.170)
Non-binary/Other	0.215* (0.191)	0.258 (0.225)
Family Status		
Married (1=yes)	4.444*** (0.764)	4.164*** (0.719)
Has children (1=yes)	3.357*** (0.566)	2.940*** (0.470)
Background		
Parents have bachelor's (1=yes)	0.803 (0.144)	0.772 (0.134)
Low-income background (1=yes)	0.984 (0.177)	0.941 (0.164)
English primary language (1=yes)	1.808* (0.470)	1.395 (0.356)
Education and Employment		
Has advanced degree (1=yes)	1.044 (0.167)	1.042 (0.162)
Currently employed (1=yes)	1.311 (0.404)	1.534 (0.455)
Number of leadership positions	1.000 (0.070)	1.021 (0.069)
Service-oriented (1=yes)	1.303 (0.213)	1.316* (0.208)
Constant	0.253*** (0.117)	0.233*** (0.106)
N	1,059	1,059
Pseudo R^2	0.220	0.195

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

5.2. Effects of Student Loan Debt on Family Formation

The relationship between student loan debt and family formation outcomes was more complex. For marriage, the full sample analysis shown in Table 5 revealed that graduates with low debt burden had 39.7% lower odds of being married (OR = 0.603, $p < 0.01$) and those with medium debt burden had 25.8% lower odds (OR = 0.742, $p < 0.10$) compared to those without student loans. However, those with high debt burden did not differ significantly from those without loans in their likelihood of marriage.

Among liberal arts graduates specifically, Table 6 shows that those with low debt burden had 41.1% lower odds of being married (OR = 0.589, $p < 0.01$) compared to those without loans. However, those with medium and high debt burden did not differ significantly from their peers without loans. When using debt-to-income ratio categories as shown in Table 7, liberal arts graduates with ratios of 5% or less had 39.3% lower odds of being married (OR = 0.607, $p < 0.01$) compared to those without debt, while other categories did not show statistically significant differences.

Interestingly, the interaction analysis revealed that the effect of medium debt burden on marriage differed significantly between liberal arts graduates and others. As shown in Table 9, while medium debt burden was associated with lower odds of marriage among non-liberal arts graduates (OR = 0.434, p <

0.01), this negative effect was partially offset for liberal arts graduates (interaction OR = 1.904, p < 0.05). This suggests that liberal arts graduates might be more resilient to the negative effects of moderate debt burden on marriage decisions.

For having children, the relationship with student loan debt was more consistent. In the full sample, as shown in Table 5, graduates with medium debt burden had 22.6% lower odds (OR = 0.774, p < 0.10) and those with high debt burden had 22.1% lower odds (OR = 0.779, p < 0.10) of having children compared to those without loans. Among liberal arts graduates, Table 6 shows that those with high debt burden had 32.3% lower odds of having children (OR = 0.677, p < 0.05) compared to those without loans. When using debt-to-income ratio categories as shown in Table 7, liberal arts graduates with ratios of 5% or less had 28.8% lower odds of being married (OR = 0.712, p < 0.01) compared to those without debt, while other categories did not show statistically significant differences.

The interaction analysis in Table 9 did not reveal significant differences between liberal arts graduates and others in the effect of student loan debt on having children, suggesting that the negative relationship between debt burden and having children is relatively consistent across major fields.

Table 5. *Logistic Regression Results for Family Formation Outcomes - Full Sample.*

Variable	Model 1: Married	Model 2: Has Children
Debt Burden (ref: No loans)		
Low	0.603** (0.099)	0.810 (0.126)
Medium	0.742* (0.116)	0.774* (0.110)
High	1.167 (0.197)	0.779* (0.113)
Race/Ethnicity (ref: White)		
Black	0.287*** (0.048)	0.906 (0.149)
Asian	0.481** (0.116)	0.435*** (0.105)
Hispanic	0.691* (0.137)	0.922 (0.168)
Other	0.643* (0.164)	0.808 (0.193)
Gender (ref: Man)		
Woman	0.938 (0.114)	1.072 (0.115)
Non-binary/Other	0.257** (0.143)	0.096** (0.101)
Background		
Parents have bachelor's (1=yes)	0.715** (0.098)	0.700*** (0.084)
Low-income background (1=yes)	0.831 (0.113)	0.959 (0.117)
English primary language (1=yes)	1.003 (0.197)	0.718* (0.132)
Education and Employment		
Has advanced degree (1=yes)	0.961 (0.120)	0.632*** (0.070)
Currently employed (1=yes)	1.165 (0.268)	0.802 (0.167)
Service-oriented (1=yes)	1.103 (0.150)	0.906 (0.111)
Religious group (1=yes)	1.389* (0.240)	1.707*** (0.253)
Major (ref: Professional)		
Arts and Humanities	0.577** (0.124)	0.394*** (0.070)
Social Sciences	0.659** (0.135)	0.718** (0.118)
STEM	0.629** (0.138)	0.683** (0.122)
Constant	6.975*** (2.675)	3.791*** (1.292)
N	1,673	1,673

Variable	Model 1: Married	Model 2: Has Children
Pseudo R^2	0.059	0.050

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

Table 6. *Logistic Regression Results for Family Formation Outcomes - Liberal Arts Graduates.*

Variable	Model 1: Married	Model 2: Has Children
Debt Burden (ref: No loans)		
Low	0.589** (0.116)	0.845 (0.158)
Medium	0.922 (0.176)	0.797 (0.137)
High	1.314 (0.284)	0.677* (0.128)
Race/Ethnicity (ref: White)		
Black	0.278*** (0.056)	0.959 (0.188)
Asian	0.397** (0.125)	0.722 (0.223)
Hispanic	0.702 (0.173)	0.984 (0.221)
Other	0.619 (0.187)	0.877 (0.248)
Gender (ref: Man)		
Woman	0.890 (0.131)	1.051 (0.139)
Non-binary/Other	0.306* (0.189)	0.119** (0.126)
Background		
Parents have bachelor's (1=yes)	0.722* (0.124)	0.792 (0.121)
Low-income background (1=yes)	0.821 (0.139)	1.021 (0.157)
English primary language (1=yes)	0.940 (0.234)	0.754 (0.173)
Education and Employment		
Has advanced degree (1=yes)	1.037 (0.158)	0.741** (0.101)
Currently employed (1=yes)	1.007 (0.285)	0.658 (0.168)
Service-oriented (1=yes)	1.066 (0.180)	1.087 (0.167)
Religious group (1=yes)	1.440* (0.309)	1.456** (0.270)
Constant	5.022*** (2.089)	1.909* (0.715)
N	1,059	1,059
Pseudo R^2	0.059	0.027

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

Table 7. *Logistic Regression Results with Debt-to-Income Ratio - Liberal Arts Graduates.*

Variable	Homeownership	Marriage	Has Children
DTI Ratio (ref: No debt)			
DTI ≤ 5%	0.554*** (0.116)	0.712** (0.140)	0.920 (0.166)

Variable	Homeownership	Marriage	Has Children
DTI 5-10%	0.499*** (0.110)	0.914 (0.198)	0.765 (0.150)
DTI 10-15%	0.939 (0.312)	1.101 (0.372)	0.602* (0.183)
DTI > 15%	0.482*** (0.132)	1.040 (0.272)	0.966 (0.226)
Race/Ethnicity (ref: White)			
Black	0.425*** (0.101)	0.298*** (0.062)	0.913 (0.186)
Asian	0.407** (0.151)	0.321*** (0.107)	0.549* (0.187)
Hispanic	0.745 (0.206)	0.730 (0.195)	0.989 (0.241)
Other	1.052 (0.354)	0.567* (0.179)	0.893 (0.266)
Gender (ref: Man)			
Woman	1.264 (0.205)	0.835 (0.130)	1.019 (0.142)
Non-binary/Other	0.239 (0.215)	0.349 (0.233)	0.149* (0.159)
Family Status			
Married (1=yes)	4.669*** (0.840)		
Has children (1=yes)	3.097*** (0.542)		
Background			
Parents have bachelor's (1=yes)	0.846 (0.159)	0.748* (0.135)	0.818 (0.131)
Low-income background (1=yes)	1.116 (0.210)	0.806 (0.143)	1.088 (0.175)
English primary language (1=yes)	1.879** (0.517)	0.897 (0.238)	0.772 (0.189)
Education and Employment			
Has advanced degree (1=yes)	1.029 (0.172)	1.236 (0.197)	0.745** (0.107)
Currently employed (1=yes)	1.445 (0.603)	1.267 (0.477)	0.855 (0.297)
Number of leadership positions	1.010 (0.073)		
Service-oriented (1=yes)	1.257 (0.217)	0.981 (0.178)	1.055 (0.169)
Religious group (1=yes)	1.741**(0.211)	1.534* (0.344)	1.486** (0.287)
Constant	0.199*** (0.110)	4.130*** (2.023)	1.358 (0.608)
N	960	960	960
Pseudo R^2	0.215	0.055	0.023

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

Table 8. *Logistic Regression Results with Debt-to-Income Ratio - Full Sample.*

Variable	Homeownership	Marriage	Has Children
DTI Ratio (ref: No debt)			
DTI ≤ 5%	0.543*** (0.092)	0.653*** (0.105)	0.894 (0.132)
DTI 5-10%	0.515*** (0.094)	0.837 (0.151)	0.826 (0.132)
DTI 10-15%	0.805 (0.216)	0.984 (0.267)	0.621** (0.149)
DTI > 15%	0.468*** (0.099)	0.962 (0.200)	0.846 (0.158)
Race/Ethnicity (ref: White)			

Variable	Homeownership	Marriage	Has Children
Black	0.477*** (0.095)	0.293*** (0.052)	0.893 (0.154)
Asian	0.524** (0.140)	0.389*** (0.098)	0.359*** (0.094)
Hispanic	0.739 (0.164)	0.635** (0.135)	0.910 (0.177)
Other	0.751 (0.211)	0.557** (0.148)	0.792 (0.199)
Gender (ref: Man)			
Woman	1.136 (0.151)	0.852 (0.110)	1.029 (0.117)
Non-binary/Other	0.473 (0.333)	0.274** (0.160)	0.113** (0.119)
Family Status			
Married (1=yes)	4.392*** (0.637)		
Has children (1=yes)	3.144*** (0.446)		
Background			
Parents have bachelor's (1=yes)	0.950 (0.142)	0.707** (0.102)	0.690*** (0.087)
Low-income background (1=yes)	1.076 (0.160)	0.782* (0.112)	0.997 (0.127)
English primary language (1=yes)	1.645** (0.355)	0.908 (0.188)	0.737* (0.144)
Education and Employment			
Has advanced degree (1=yes)	1.046 (0.143)	1.050 (0.138)	0.643*** (0.074)
Currently employed (1=yes)	1.543 (0.517)	1.631 (0.498)	1.085 (0.312)
Number of leadership positions	0.988 (0.061)		
Service-oriented (1=yes)	1.169 (0.161)	1.048 (0.150)	0.931 (0.120)
Religious group (1=yes)		1.408* (0.255)	1.666*** (0.259)
Major (ref: Professional)			
Arts and Humanities	0.522** (0.120)	0.605** (0.136)	0.389*** (0.073)
Social Sciences	0.777 (0.169)	0.689* (0.147)	0.654** (0.114)
STEM	0.788 (0.186)	0.713 (0.165)	0.671** (0.128)
Constant	0.342** (0.167)	5.839*** (2.595)	2.822** (1.143)
N	1,512	1,512	1,512
Pseudo R^2	0.212	0.058	0.049

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

Table 9. *Interaction Effects of Student Loan Debt and Liberal Arts Major.*

Variable	Homeownership	Marriage	Has Children
Debt Burden (ref: No loans)			
Low	0.387*** (0.105)	0.528** (0.153)	0.708 (0.184)
Medium	0.491*** (0.123)	0.434*** (0.112)	0.656* (0.154)
High	0.412*** (0.092)	0.846 (0.215)	0.779 (0.162)
Major			
Liberal Arts (1=yes)	0.630*** (0.105)	0.685** (0.122)	0.753* (0.109)

Variable	Homeownership	Marriage	Has Children
Liberal Arts X Debt Burden			
Liberal Arts X Low	1.087 (0.355)	0.931 (0.321)	1.196 (0.379)
Liberal Arts X Medium	1.307 (0.394)	1.904** (0.598)	1.161 (0.334)
Liberal Arts X High	1.260 (0.357)	1.250 (0.403)	0.762 (0.209)
Constant	3.394*** (0.153)	4.199*** (2.392)	2.617*** (1.049)
N	1,673	1,673	1,673
Pseudo R^2	0.194	0.048	0.026

Note: Values are odds ratios with standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.001

5.3. Control Variables and Other Findings

Several control variables showed significant associations with homeownership and family formation outcomes. For homeownership, being married (OR = 4.175, $p < 0.001$) and having children (OR = 3.435, $p < 0.001$) were the strongest predictors of higher odds among all graduates, as shown in Table 3. Racial disparities were evident, with Black (OR = 0.430, $p < 0.001$), Asian (OR = 0.508, $p < 0.05$), and Hispanic (OR = 0.654, $p < 0.05$) graduates experiencing significantly lower odds of homeownership compared to White graduates, while differences for Other race graduates (OR = 0.721) were not statistically significant. English as a primary home language was associated with higher odds of homeownership in the full sample (OR = 1.519, $p < 0.05$), a pattern that was also significant among liberal arts graduates (OR = 1.808, $p < 0.05$).

Marriage patterns revealed significant racial disparities among liberal arts graduates, with Black graduates experiencing the most pronounced disadvantage (OR = 0.278, $p < 0.001$), followed by Asian graduates (OR = 0.397, $p < 0.01$), as shown in Table 6. While Hispanic (OR = 0.702) and Other race (OR = 0.619) graduates also showed lower odds of marriage compared to White peers, these differences were not statistically significant. Gender identity played a notable role, with non-binary/other individuals having marginally lower odds of marriage (OR = 0.306, $p < 0.10$) compared to men. Interestingly, having parents with college degrees was marginally associated with lower odds of marriage (OR = 0.722, $p < 0.10$), suggesting potential differences in life timing or priorities among those from more educated families. Participation in religious groups emerged as a significant positive predictor of marriage (OR = 1.440, $p < 0.10$).

For childbearing outcomes, the most striking finding was the substantially lower odds among those with non-binary/other gender identity (OR = 0.119, $p < 0.05$) compared to men. Unlike marriage patterns, racial differences in having children were not statistically significant among liberal arts graduates, with Black (OR = 0.959), Asian (OR = 0.722), Hispanic (OR = 0.984), and Other race (OR = 0.877) graduates showing similar odds to White peers (all $p > 0.10$). Educational attainment showed contrasting effects: having an advanced degree was significantly associated with lower odds of having children (OR = 0.741, $p < 0.05$), while participation in religious groups was associated with higher odds (OR = 1.456, $p < 0.05$), suggesting that religious involvement may encourage family formation.

Student debt burden showed nuanced effects on family formation that differed from homeownership patterns. For marriage in the full sample (Table 5), low debt burden (OR = 0.603, $p < 0.01$) and medium debt burden (OR = 0.742, $p < 0.10$) were both associated with significantly lower odds compared to having no loans, while high debt burden showed no significant effect (OR = 1.167, $p > 0.10$). Among liberal arts graduates, only low debt burden was associated with significantly lower odds of marriage (OR = 0.589, $p < 0.01$), while medium and high debt levels showed no significant associations. For having children, medium debt burden (OR = 0.774, $p < 0.10$) and high debt burden (OR = 0.779, $p < 0.10$) were marginally associated with lower odds in the full sample, while among liberal arts graduates, only high debt burden showed a significant negative association (OR = 0.677, $p < 0.05$).

Notably, the interaction analysis revealed that the effect of medium debt burden on marriage differed significantly between liberal arts graduates and others. As shown in Table 9, while medium debt burden was associated with lower odds of marriage among non-liberal arts graduates (OR = 0.434, $p < 0.001$), this negative effect was partially offset for liberal arts graduates (interaction OR = 1.904, $p < 0.05$). This suggests that liberal arts graduates might be more resilient to the negative effects of moderate debt burden on marriage decisions.

When comparing liberal arts graduates to those in other fields, the interaction analysis shown in Table 9 reveals that liberal arts graduates had significantly lower odds of homeownership, marriage and having children compared to graduates from professional fields, even after controlling for student debt and other factors. As shown in Table 9, liberal arts graduates had 37.0% lower odds of homeownership (OR = 0.630, $p < 0.01$), 31.5% lower odds of marriage (OR = 0.685,

$p < 0.05$) and 24.7% lower odds of having children (OR = 0.753, $p < 0.05$) compared to graduates from professional fields. This suggests that major field choice has independent effects on life outcomes beyond the differential debt burden associated with different academic disciplines, potentially reflecting differences in career trajectories, earning potential, or cultural values associated with different fields of study.

5.4. Predicted Probabilities on Key Outcomes

To better understand the magnitude of these effects, I calculated predicted probabilities of homeownership and family formation outcomes by debt burden and major field, as shown in Table 10. For liberal arts graduates, the predicted probability of homeownership was 68.1% for those with no loans, 47.3% for those with low debt burden, 57.8% for those with medium debt burden, and 52.6% for those with high debt burden. This represents a substantial 20.8 percentage point decrease in homeownership probability between those with no loans and those with low debt burden.

For marriage, liberal arts graduates had a predicted probability of 74.2% for those with no loans, 58.6% for those with low debt burden, 70.4% for those with medium debt burden, and 75.3% for those with high debt burden. This U-shaped pattern suggests that while low debt burden has a substantial negative effect on marriage (a 15.6 percentage point decrease compared to those with no loans), the relationship becomes less negative or even positive at higher debt levels.

For having children, the predicted probability was 44.0% for liberal arts graduates with no loans, 42.0% for those with low debt burden, 39.5% for those with medium debt burden, and 33.7% for those with high debt burden. This represents a consistent downward trend, with a 10.3 percentage point decrease in the probability of having children between those with no loans and those with high debt burden.

When comparing liberal arts graduates to others, the analysis showed that the pattern of debt effects was generally similar across major fields, though the baseline probabilities differed. The predicted probability of homeownership for non-liberal arts graduates without loans was 77.3%, compared to 68.1% for liberal arts graduates without loans. This 9.2 percentage point gap persisted across debt categories, reflecting a consistent disadvantage for liberal arts graduates in terms of homeownership.

In summary, the results provide strong evidence that student loan debt has significant negative effects on homeownership attainment among college graduates, with somewhat more complex relationships for family formation outcomes. While liberal arts graduates show similar patterns of debt effects as graduates from other fields, they face additional challenges in achieving these life milestones, suggesting a compounding of disadvantages for this population.

Table 10. Predicted Probabilities of Key Outcomes by Debt Burden and Major.

Debt Burden	Homeownership		Marriage		Has Children	
	Non-LA Grads	LA Grads	Non-LA Grads	LA Grads	Non-LA Grads	LA Grads
No loans	0.773 (0.024)	0.681 (0.021)	0.808 (0.022)	0.742 (0.020)	0.532 (0.030)	0.440 (0.024)
Low	0.568 (0.058)	0.473 (0.038)	0.669 (0.054)	0.586 (0.038)	0.475 (0.050)	0.420 (0.038)
Medium	0.625 (0.049)	0.578 (0.033)	0.646 (0.049)	0.704 (0.031)	0.486 (0.058)	0.395 (0.033)
High	0.583 (0.043)	0.526 (0.036)	0.780 (0.036)	0.753 (0.031)	0.381 (0.061)	0.337 (0.034)

Note: Values are adjusted predicted probabilities with standard errors in parentheses. All predicted probabilities are statistically significant at $p<0.001$. Non-LA Grads = Non-Liberal Arts Graduates; LA Grads = Liberal Arts Graduates.

6. Discussion

This study examined the impact of student loan debt on homeownership and family formation outcomes among college graduates, with particular attention to potential differences between liberal arts graduates and those from other disciplines. The results provide compelling evidence that student loan debt significantly constrains homeownership attainment across all graduates, while showing more nuanced relationships with family formation outcomes. These findings have important implications for understanding how early financial constraints shape life course trajectories in contemporary society.

6.1. Debt Burden and Life Course Transitions

The consistent negative relationship between student loan debt and homeownership aligns with the integrated theoretical framework proposed in this study. Through the lens of life course theory, student debt represents an early adult financial constraint that disrupts the normative sequencing of adult milestones by delaying or preventing homeownership. This

finding reinforces previous research by Houle and Berger [22] and Mezza et al. [25], while extending it through more detailed categorization of debt burden and consideration of debt-to-income ratios. The substantial magnitude of these effects, with even low debt burden associated with approximately 50% lower odds of homeownership, suggests that student loan debt fundamentally alters the financial capacity of graduates to achieve this traditional milestone of adulthood.

The debt-to-income ratio results further illuminate the mechanisms through which student debt constrains homeownership. The finding that graduates with debt-to-income ratios of 10-15% did not show significantly different homeownership rates from those without debt, while those with both lower and higher ratios showed reduced homeownership, suggests a non-linear relationship that warrants further investigation. This non-linearity might reflect strategic homebuying decisions among those with moderate debt-to-income ratios, potentially representing individuals with both higher debt and higher income who remain attractive mortgage candidates. Alternatively, it might capture variation in risk tolerance or financial management strategies across different segments of the graduate population.

For family formation outcomes, the more complex pattern of results aligns with theoretical expectations about the multifaceted nature of these decisions. The U-shaped relationship between debt burden and marriage, with low and medium debt associated with lower marriage rates but high debt showing no significant difference from those without loans, supports Addo's [1] observation that financial constraints may shape relationship formation in complex ways rather than simply delaying it. From a life course perspective, these findings suggest that while student debt generally delays marriage, other factors may counterbalance this effect at higher debt levels. For instance, those with high debt burden might seek marriage as a strategy for pooling resources and managing financial challenges, consistent with both economic necessity and companionship models of marriage formation [27].

The consistent negative relationship between student debt and having children, particularly among those with high debt burden, highlights how financial constraints may influence family planning decisions. The finding that liberal arts graduates with high debt burden had 32.3% lower odds of having children compared to those without loans suggests that this group may be particularly sensitive to financial considerations in family planning. This aligns with research by Nau, Dwyer, and Hodson [26] on debt and delayed childbearing, while adding nuance about potential variation across educational backgrounds.

6.2. Liberal Arts Graduates and the Impact of Student Debt

One of the most intriguing findings of this study concerns the similarities and differences between liberal arts graduates and those from other fields in how student debt affects life outcomes. The lack of significant interaction effects for homeownership suggests that while liberal arts graduates have lower overall homeownership rates, the negative effect of student debt on homeownership operates similarly across major fields. This finding is somewhat surprising given the typically lower initial earnings of liberal arts graduates [9]. It suggests that the financial constraints imposed by student debt may override field-specific advantages in the housing market, creating similar relative disadvantages across disciplines despite different baseline probabilities.

In contrast, the significant interaction effect for marriage, with liberal arts graduates showing greater resilience to the negative effects of medium debt burden compared to other graduates, suggests potentially different adaptation strategies across academic backgrounds. This finding may reflect differences in values, priorities, or social capital across fields of study. Liberal arts education often emphasizes critical thinking, adaptability, and non-material aspects of wellbeing [5], potentially fostering approaches to life planning that are less contingent on financial considerations alone. Alternatively, the social networks formed in liberal arts programs might provide different types of support or normative expectations regarding marriage timing relative to those in professional or STEM fields.

The overall lower odds of homeownership, marriage, and having children among liberal arts graduates compared to those from professional fields, controlling for student debt and other factors, points to broader patterns of stratification in life course outcomes by educational background. These findings suggest that major field choice has independent effects on life outcomes beyond the differential debt burden associated with different majors. From a human capital perspective, this may reflect persistent differences in earnings trajectories that shape financial capacity for major life transitions [4]. From a status attainment perspective, it may indicate that educational pathways continue to sort individuals into different life trajectories with implications for major milestones like homeownership and family formation.

6.3. Theoretical Implications

The findings from this study provide support for the integrated theoretical framework proposed, while also suggesting refinements. Life course theory's emphasis on linked lives and cumulative disadvantage receives support from the evidence that early financial constraints (student debt) have lasting consequences for multiple interrelated life transitions. The compounding of disadvantages observed for liberal arts graduates, who face both the general constraints of student debt and additional field-specific challenges, exemplifies the cumulative nature of advantage and disadvantage over the life course [16].

Human capital theory receives partial support but requires extension to fully account for the observed patterns. The per-

sistent disadvantages experienced by liberal arts graduates, even after controlling for debt burden, suggest that different types of human capital development may yield different returns not only in labor markets but also in life course attainment more broadly. This extends traditional human capital approaches by considering returns beyond earnings alone. However, the resilience observed among liberal arts graduates in maintaining marriage rates despite moderate debt burden suggests that human capital development may also foster adaptive strategies and resources that operate outside purely economic domains.

Financial strain perspectives are particularly useful for understanding the observed relationships between debt-to-income ratios and life outcomes. The non-linear patterns observed for homeownership suggest that subjective experiences of financial strain, risk assessment, and strategic decision-making may be as important as objective financial constraints in shaping major life decisions. Furthermore, the varying relationships between debt and different life outcomes (more consistently negative for homeownership than for marriage) suggest that financial strain may operate differently across domains depending on the resources and alternatives available.

Social reproduction theories gain support from the findings that both student debt and major field independently shape life course outcomes in ways that may perpetuate existing patterns of advantage and disadvantage. The substantially lower homeownership rates among Black and Asian graduates compared to White peers, even after controlling for student debt and other factors, highlight how educational debt may interact with broader systems of stratification to reinforce inequality. This suggests that the consequences of student debt for life course trajectories cannot be fully understood without attending to the social positioning of individuals within broader structures of opportunity and constraint.

6.4. Practical Implications

Several practical implications emerge from these findings. For higher education institutions, the substantial negative effect of even low debt burden on homeownership suggests that minimizing student borrowing should be a priority in financial aid strategies. This may be particularly important for liberal arts programs, where graduates face additional challenges in achieving traditional adult milestones. Targeted financial literacy education, loan counseling, and career development services might help students better understand and prepare for the long-term implications of educational financing decisions.

For policymakers, the evidence that student debt significantly constrains life options well into adulthood suggests that current approaches to higher education financing may have unintended consequences for broader social and economic outcomes. Policy solutions might include income-driven repayment programs that better account for major-specific earnings trajectories, targeted loan forgiveness for graduates in fields with lower earnings potential, or expansion of grant-based aid to reduce overall borrowing. The finding that debt-to-income ratios are important predictors of life outcomes suggests that policies addressing the relationship between debt and income, rather than debt alone, may be particularly effective.

For prospective students and families making educational investment decisions, these findings provide important context for weighing the costs and benefits of different educational pathways. While the results should not discourage liberal arts education, which offers many benefits beyond those captured in this study, they do suggest that careful consideration of financing strategies is warranted, particularly for students concerned about achieving traditional adult milestones in a timely manner. Strategic approaches might include greater utilization of community college pathways, deliberate selection of lower-cost institutions, or pursuit of scholarship opportunities to minimize debt accumulation.

6.5. Limitations and Future Research

Several limitations of this study suggest directions for future research. First, while the dataset provides valuable information about graduates' current circumstances, the cross-sectional nature of the outcome measures limits our ability to examine the timing and sequencing of life transitions in detail. Longitudinal data tracking individual trajectories from college graduation through multiple adult transitions would provide more nuanced understanding of how student debt shapes the timing and ordering of major life events.

Second, while this study examines differences between liberal arts graduates and others broadly, more fine-grained analysis of specific majors might reveal important variation within these categories. Future research could explore whether certain liberal arts disciplines show distinct patterns of resilience or vulnerability to the effects of student debt, potentially identifying protective factors or areas of particular concern.

Finally, while the debt-to-income ratio provides a more nuanced measure of financial strain than absolute debt alone, it represents only one aspect of graduates' overall financial wellbeing. Future research incorporating measures of wealth accumulation, financial security, and subjective financial stress would provide a more comprehensive picture of how student debt shapes economic trajectories across different graduate populations.

7. Conclusions

This study provides compelling evidence that student loan debt significantly constrains homeownership attainment and shapes family formation decisions among college graduates, with both similarities and differences in these effects between liberal arts graduates and those from other fields. The integrated

theoretical framework combining life course theory, human capital perspectives, financial strain approaches, and social reproduction theories offers a robust foundation for understanding these patterns and their implications for individual life trajectories and broader social stratification processes.

As student loan debt continues to grow as a financial challenge for college graduates, understanding its differential impact across educational backgrounds becomes increasingly important for individuals making educational investment decisions, institutions developing financial aid policies, and policymakers addressing higher education financing at a systemic level. By illuminating how student debt shapes major life transitions differently across graduate populations, this study contributes to a more nuanced understanding of the evolving relationship between higher education and the transition to adulthood in contemporary society.

Abbreviations

CBII	College and Beyond II Dataset
DTI	Debt-to-Income Ratio
LA	Liberal Arts

Author Contributions

Osasohan Agbonlahor is the sole author. The author read and approved the final manuscript.

Funding

This research was funded by the Arthur Vining Davis Foundation and the American Council of Learned Societies (AVDF/ACLS) Fellowship for Research on the Liberal Arts Award.

Data Availability Statement

This research utilized data from the College and Beyond II (CBII) dataset. The College and Beyond II dataset tracks long-term outcomes of higher education by combining institutional data, survey responses, and linked administrative records for bachelor's degree-seeking undergraduate students who enrolled at 19 public institutions between 2000 and 2021. The dataset is accessible to qualified researchers through the Inter-university Consortium for Political and Social Research (ICPSR) at the University of Michigan with appropriate data use agreements. Additional information about data access, documentation, and use restrictions can be found at https://www.icpsr.umich.edu/web/ICPSR/series/1928.

Conflicts of Interest

The author declares no conflicts of interest.

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