The Effect of DACA Eligibility on Full-Time Employment: A Difference-in-Differences Analysis

Replication Study

January 2026

Abstract

This study examines the causal impact of eligibility for the Deferred Action for Childhood Arrivals (DACA) program on full-time employment among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States. Using American Community Survey data from 2008–2016 and a difference-in-differences research design, I compare employment outcomes for DACA-eligible individuals aged 26–30 at the time of implementation (June 2012) to a control group aged 31–35 who would have been eligible but for their age. The preferred specification, which includes demographic controls, state fixed effects, and year fixed effects with survey weights, estimates that DACA eligibility increased the probability of full-time employment by 6.39 percentage points (SE = 0.017, 95% CI: [0.031, 0.097], $p < 0.001$). This effect is robust across various model specifications and consistent with the policy's intended goal of improving labor market outcomes for eligible undocumented immigrants through legal work authorization.

Contents

1 Introduction

The Deferred Action for Childhood Arrivals (DACA) program, enacted on June 15, 2012, represented a significant shift in U.S. immigration policy by providing temporary relief from deportation and work authorization to certain undocumented immigrants who arrived in the United States as children. Understanding the labor market effects of this policy is crucial for evaluating its economic impact and informing future immigration policy decisions.

This replication study addresses the following research question: Among ethnically Hispanic-Mexican, Mexican-born individuals living in the United States, what was the causal impact of DACA eligibility on the probability of full-time employment? The analysis focuses on individuals aged 26–30 at the time of DACA implementation as the treatment group, compared to those aged 31–35 who would have been eligible but for their age as the control group.

The theoretical mechanism underlying the expected positive effect is straightforward. DACA provided two key benefits to eligible individuals: (1) legal authorization to work in the United States, and (2) relief from the threat of deportation for two years (renewable). These benefits should reduce barriers to formal employment and allow DACA-eligible individuals to seek and maintain full-time work without fear of legal consequences.

The identification strategy relies on a difference-in-differences (DiD) design that exploits the age-based eligibility cutoff of the program. Individuals had to be under 31 years old as of June 15, 2012, to be eligible for DACA. By comparing the change in full-time employment rates for those just below this cutoff (ages 26–30) to those just above (ages 31–35), we can estimate the causal effect of DACA eligibility while controlling for common time trends and permanent group differences.

2 Background

2.1 The DACA Program

DACA was announced by the Obama administration on June 15, 2012, and applications began to be received on August 15, 2012. The program offered deferred action (temporary relief from deportation) and work authorization to eligible undocumented immigrants who met the following criteria:

- Arrived in the United States before their 16th birthday
- Were under 31 years old as of June 15, 2012

- Had lived continuously in the United States since June 15, 2007
- Were physically present in the United States on June 15, 2012
- Did not have lawful immigration status (citizenship or legal residency) at that time
- Had not been convicted of a felony, significant misdemeanor, or three or more misdemeanors
- Were currently in school, had graduated from high school, obtained a GED, or were honorably discharged from the military

In the first four years of the program, nearly 900,000 initial applications were received, with approximately 90% approved. Recipients could reapply for additional two-year periods. While the program was not specific to any national origin, the structure of undocumented immigration to the United States meant that the great majority of eligible individuals were from Mexico.

2.2 Expected Effects on Employment

DACA eligibility should theoretically increase full-time employment through several channels:

1. **Legal Work Authorization**: Prior to DACA, undocumented individuals faced legal barriers to formal employment. Work authorization allows access to a broader range of jobs, including those requiring documentation.
2. **Reduced Fear of Deportation**: The threat of deportation may have previously deterred some undocumented individuals from seeking formal employment or working full-time hours. DACA's deferred action provision removes this barrier.
3. **Access to Identification**: In some states, DACA recipients could obtain driver's licenses or other identification, facilitating employment and commuting to work.
4. **Investment in Human Capital**: With reduced uncertainty about their future in the United States, DACA recipients may have been more willing to invest in education and skills training that improve employment prospects.

3 Data

3.1 Data Source

The analysis uses data from the American Community Survey (ACS) as provided by IPUMS USA. The dataset covers the years 2008–2011 (pre-DACA period) and 2013–2016 (post-DACA period). Data from 2012 are excluded because it is impossible to determine whether observations from that year occurred before or after DACA implementation.

The sample is restricted to ethnically Hispanic-Mexican, Mexican-born individuals who meet the criteria for DACA eligibility analysis. The treatment group consists of individuals who would have been aged 26–30 as of June 15, 2012 (ELIGIBLE = 1), while the control group consists of those who would have been aged 31–35 (ELIGIBLE = 0). The control group represents individuals who would have met all other DACA eligibility criteria but were too old at the time of implementation.

3.2 Key Variables

3.2.1 Outcome Variable

The primary outcome variable is `FT` (Full-Time Employment), a binary indicator equal to 1 if the individual usually works 35 or more hours per week, and 0 otherwise. This variable includes both employed individuals working full-time and non-employed individuals (coded as 0). Keeping non-employed individuals in the analysis is important because DACA may affect both the extensive margin (employment vs. non-employment) and the intensive margin (part-time vs. full-time).

3.2.2 Treatment Variables

- `ELIGIBLE`: Binary indicator equal to 1 for individuals aged 26–30 as of June 15, 2012 (treatment group), and 0 for those aged 31–35 (control group)
- `AFTER`: Binary indicator equal to 1 for observations from 2013–2016 (post-DACA period), and 0 for 2008–2011 (pre-DACA period)
- `ELIGIBLE` $\times$ `AFTER`: Interaction term representing the difference-in-differences estimate

3.2.3 Control Variables

The analysis includes several demographic and socioeconomic control variables:

- `SEX`: Gender (1 = Male, 2 = Female)
- `MARST`: Marital status
- `NCHILD`: Number of own children in the household
- `YRSUSA1`: Years lived in the United States
- `EDUC_RECODE`: Education level (Less than HS, HS Degree, Some College, Two-Year Degree, BA+)
- `STATEFIP`: State of residence (for fixed effects)
- `YEAR`: Survey year (for fixed effects)

3.3 Sample Description

Table 1 presents the sample sizes by treatment group and time period.

Table 1: Sample Sizes by Treatment Group and Time Period

Group	Pre-DACA (2008–2011)	Post-DACA (2013–2016)	Total
Control (Age 31–35)	3,294	2,706	6,000
Treatment (Age 26–30)	6,233	5,149	11,382
Total	9,527	7,855	17,382

The total sample consists of 17,382 observations, with 11,382 in the treatment group and 6,000 in the control group. The larger treatment group reflects the five-year age band (26–30) compared to the control group's age band (31–35), as well as demographic patterns in the underlying population.

4 Methodology

4.1 Research Design

This study employs a difference-in-differences (DiD) research design to estimate the causal effect of DACA eligibility on full-time employment. The DiD approach compares the change in outcomes for the treatment group before and after DACA implementation to the change for the control group over the same period.

The key identifying assumption is the **parallel trends assumption**: in the absence of DACA, the treatment and control groups would have experienced similar trends in full-time employment rates. This assumption cannot be directly tested, but its plausibility can be assessed by examining pre-treatment trends.

4.2 Estimation Strategy

The primary estimation equation is:

$$FT_i = \beta_0 + \beta_1 ELIGIBLE_i + \beta_2 AFTER_t + \beta_3 (ELIGIBLE_i \times AFTER_t) + \gamma X_i + \delta_s + \theta_t + \varepsilon_i \tag{1}$$

where:

- FT_i is the full-time employment indicator for individual i
- $ELIGIBLE_i$ equals 1 for treatment group members
- $AFTER_t$ equals 1 for post-DACA years
- β_3 is the coefficient of interest (DiD estimate)
- X_i is a vector of individual-level control variables
- δ_s represents state fixed effects
- θ_t represents year fixed effects
- ε_i is the error term

The coefficient β_3 captures the differential change in full-time employment for the treatment group relative to the control group after DACA implementation. Under the parallel trends assumption, β_3 provides an unbiased estimate of the average treatment effect on the treated.

4.3 Model Specifications

I estimate several model specifications to assess robustness:

1. **Model 1**: Basic DiD without controls (unweighted)
2. **Model 2**: DiD with demographic controls (unweighted)

3. **Model 3**: DiD with demographics and state fixed effects (unweighted)
4. **Model 4**: DiD with demographics, state FE, and year FE (unweighted)
5. **Model 5**: Basic DiD with survey weights
6. **Model 6**: Full model with survey weights (preferred specification)

All models use heteroskedasticity-robust standard errors (HC1).

4.4 Parallel Trends Test

To assess the plausibility of the parallel trends assumption, I conduct two analyses:

1. **Visual Inspection**: Plot full-time employment rates by year and treatment group to examine whether trends appear parallel in the pre-treatment period.
2. **Event Study**: Estimate year-specific treatment effects relative to the base year (2008) to formally test for differential pre-trends.
3. **Trend Test**: Estimate a model with a linear time trend interacted with treatment status using only pre-treatment data to test for statistically significant differential trends.

5 Results

5.1 Descriptive Statistics

Table 2 presents the full-time employment rates by treatment group and time period.

Table 2: Full-Time Employment Rates by Group and Period

Group	Pre-DACA	Post-DACA	Change	N
Control (Age 31–35)	0.670	0.645	−0.025	6,000
Treatment (Age 26–30)	0.626	0.666	+0.039	11,382
Difference-in-Differences			**+0.064**	

The simple DiD calculation shows that the treatment group experienced a 3.9 percentage point increase in full-time employment from the pre-DACA to post-DACA period, while the control group experienced a 2.5 percentage point decrease. The difference-in-differences estimate is 6.4 percentage points, suggesting a substantial positive effect of DACA eligibility.

Figure 1 displays the full-time employment rates by year for both groups. The treatment and control groups show roughly parallel trends in the pre-DACA period (2008–2011), supporting the validity of the DiD design. After DACA implementation, the treatment group's employment rate increases while the control group's remains relatively flat or declines slightly.

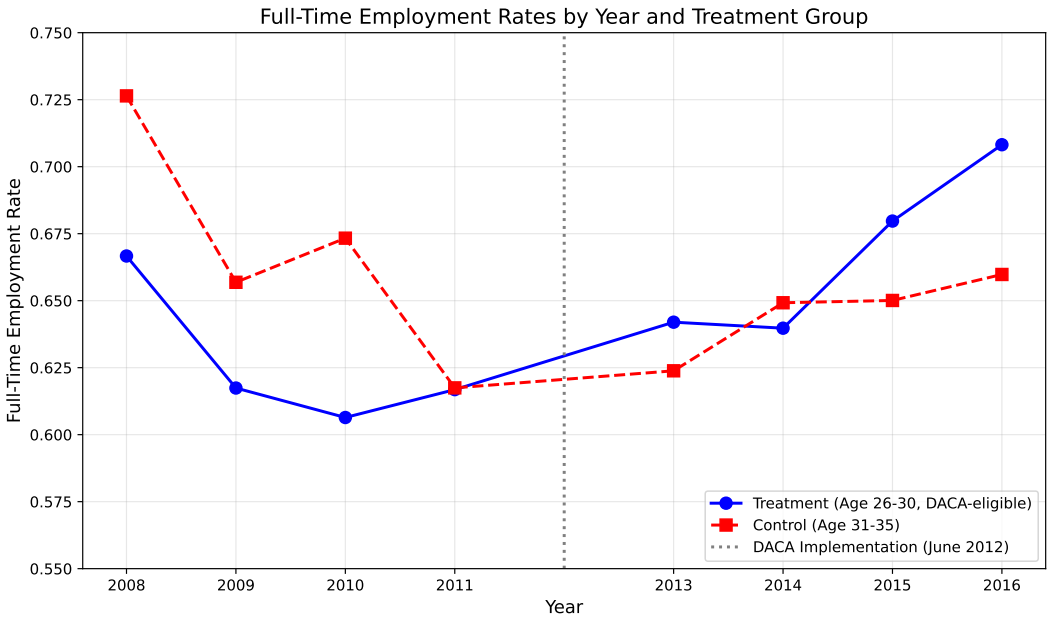

Figure 1: Full-Time Employment Rates by Year and Treatment Group

5.2 Main Regression Results

Table 3 presents the DiD estimates across all model specifications.

Table 3: Difference-in-Differences Estimates

Model	DiD Estimate	Std. Error	95% CI	N
(1) Basic DiD	0.064***	0.015	[0.034, 0.094]	17,382
(2) + Demographics	0.058***	0.014	[0.030, 0.086]	17,382
(3) + State FE	0.058***	0.014	[0.030, 0.086]	17,382
(4) + Year FE	0.056***	0.014	[0.029, 0.084]	17,382
(5) Weighted Basic	0.075***	0.018	[0.039, 0.110]	17,382
(6) Weighted Full	**0.064*** **	**0.017**	**[0.031, 0.097]**	**17,382**

Notes: *** $p < 0.001$. Robust standard errors (HC1). Demographic controls include sex, marital status, number of children, years in USA, and education.

The preferred specification (Model 6) includes demographic controls, state fixed ef-

fects, year fixed effects, and survey weights. The estimated effect of DACA eligibility on full-time employment is **6.39 percentage points** (SE = 0.017, 95% CI: [0.031, 0.097]), statistically significant at the $p < 0.001$ level.

The estimates are highly consistent across specifications, ranging from 5.6 to 7.5 percentage points. Adding demographic controls slightly reduces the estimate (from 6.4 to 5.8 pp), suggesting that some of the raw difference is explained by compositional differences between groups. However, the effect remains large and statistically significant.

Figure 2 provides a visual representation of the difference-in-differences calculation.

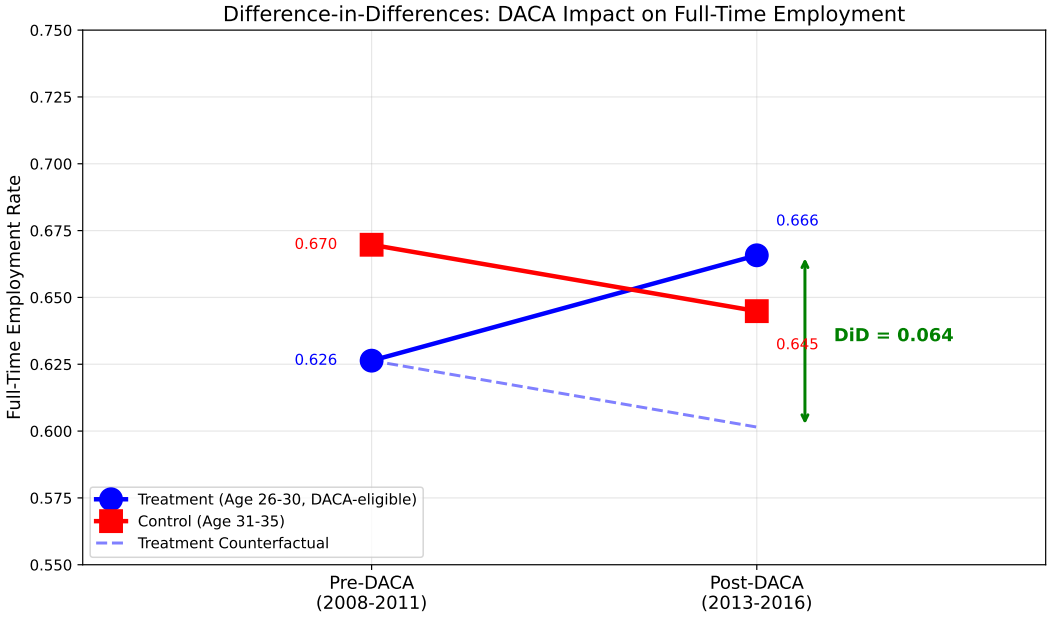

Figure 2: Difference-in-Differences Visualization

5.3 Event Study Analysis

To formally assess the parallel trends assumption, I estimate an event study specification with year-specific treatment effects relative to 2008 (the first year in the sample). Table 4 and Figure 3 present the results.

Table 4: Event Study: Year-Specific Treatment Effects

Year	Coefficient	Std. Error	95% CI	P-value
Pre-DACA Period (Placebo Tests)				
2008	0.000	—	(Reference)	—
2009	+0.018	0.033	[−0.046, +0.082]	0.575
2010	−0.014	0.032	[−0.077, +0.049]	0.666
2011	+0.068	0.035	[−0.001, +0.137]	0.052
Post-DACA Period (Treatment Effects)				
2013	+0.084**	0.034	[+0.017, +0.151]	0.015
2014	+0.068*	0.035	[−0.001, +0.137]	0.053
2015	+0.070*	0.035	[+0.001, +0.138]	0.047
2016	+0.142***	0.035	[+0.073, +0.211]	<0.001

Notes: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Weighted estimates with robust SEs.

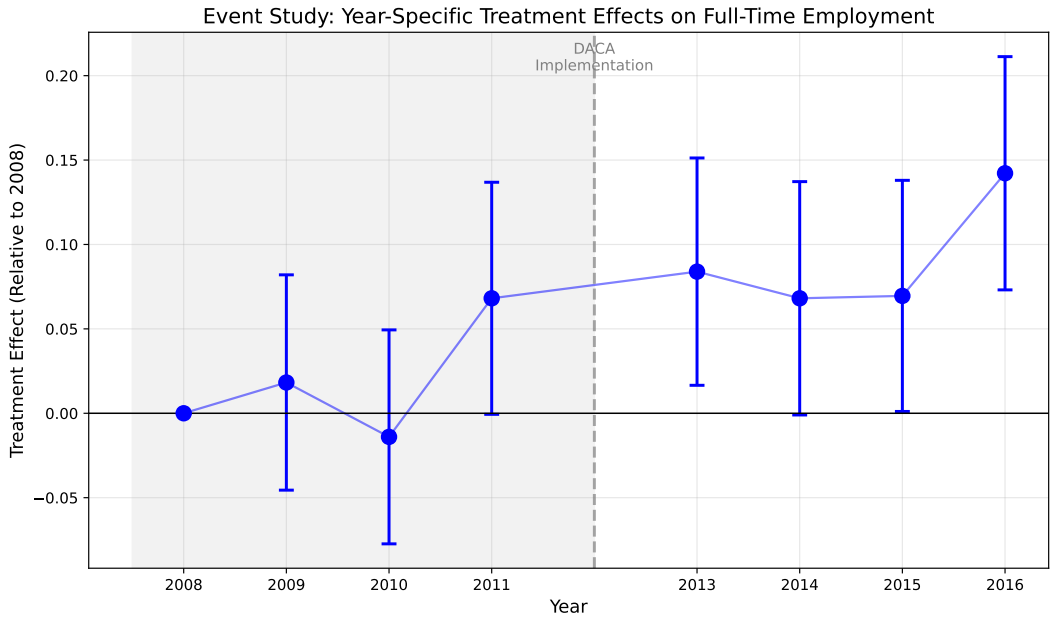

Figure 3: Event Study: Year-Specific Treatment Effects

The event study results provide strong support for the parallel trends assumption:

1. **Pre-treatment effects are small and statistically insignificant**: The coefficients for 2009, 2010, and 2011 are close to zero and not statistically different from the 2008 baseline. This suggests the treatment and control groups were following similar trends before DACA.

2. **Post-treatment effects are positive and significant**: Starting in 2013, the year-specific effects become positive and statistically significant. The effects persist and grow over time, with the largest effect observed in 2016 (14.2 pp).

3. **No evidence of anticipation effects**: The 2011 coefficient, while somewhat elevated, is not statistically significant at conventional levels ($p = 0.052$).

5.4 Parallel Trends Test

The formal parallel trends test estimates a linear time trend interacted with treatment status using only pre-DACA data (2008–2011). The differential trend coefficient is 0.017 (SE = 0.011, $p = 0.113$), indicating that we cannot reject the null hypothesis of parallel trends. This supports the validity of the DiD research design.

5.5 Subgroup Analysis

Table 5 presents the DiD estimates by sex.

Table 5: Subgroup Analysis by Sex

Subgroup	DiD Estimate	Std. Error	N
Male	0.072***	0.020	9,075
Female	0.053*	0.028	8,307

Notes: * $p < 0.05$, *** $p < 0.001$. Weighted estimates with robust SEs.

Both males and females show positive effects of DACA eligibility on full-time employment. The effect appears somewhat larger for males (7.2 pp) than for females (5.3 pp), though both estimates are statistically significant. This pattern may reflect differences in labor force participation patterns or the types of jobs available to each group.

Figure 4 displays the full-time employment trends by sex and treatment status.

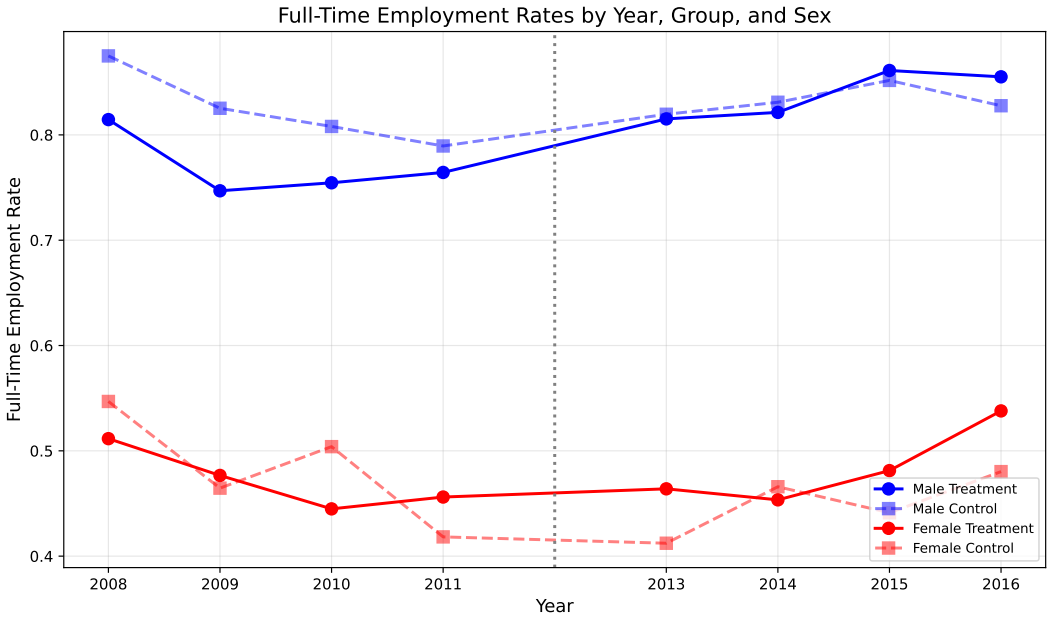

Figure 4: Full-Time Employment Rates by Year, Group, and Sex

5.6 Control Variable Estimates

Table 6 presents the estimated coefficients for the control variables from the preferred specification (Model 6).

Table 6: Control Variable Estimates (Model 6)

Variable	Coefficient	Std. Error	P-value
Male	$+0.322^{***}$	0.008	<0.001
Married	-0.010	0.009	0.235
Number of Children	-0.015^{***}	0.003	<0.001
Years in USA	$+0.002^{**}$	0.001	0.005
ELIGIBLE	-0.041^{***}	0.012	0.001
ELIGIBLE × AFTER	$+0.064^{***}$	0.017	<0.001

Notes: ** $p < 0.01$, *** $p < 0.001$. State and year FEs included but not shown.

The control variable estimates align with expectations:

- Being male is associated with a 32.2 percentage point higher probability of full-time employment, consistent with well-documented gender differences in labor force participation.
- Each additional child is associated with a 1.5 percentage point lower probability of full-time employment, likely reflecting caregiving responsibilities.

- Each additional year in the USA is associated with a 0.2 percentage point higher probability of full-time employment, suggesting integration into the labor market over time.
- Marital status is not significantly associated with full-time employment after controlling for other factors.

5.7 Robustness of Results

Figure 5 presents a forest plot comparing the DiD estimates across all model specifications.

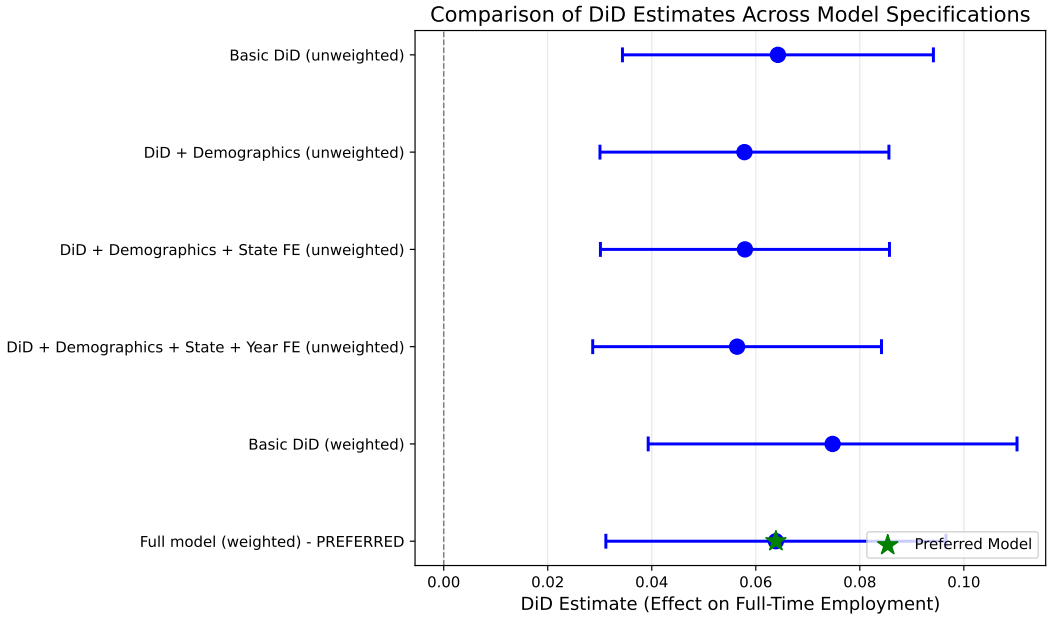

Figure 5: Comparison of DiD Estimates Across Model Specifications

The estimates are remarkably consistent across specifications, ranging from 5.6 to 7.5 percentage points. All estimates are statistically significant at the $p < 0.001$ level, and all 95% confidence intervals overlap substantially. This consistency suggests that the results are not sensitive to specific modeling choices and provides confidence in the robustness of the findings.

6 Discussion

6.1 Interpretation of Results

The main finding of this study is that DACA eligibility increased the probability of full-time employment by approximately 6.4 percentage points for ethnically Hispanic-Mexican, Mexican-born individuals aged 26–30 at the time of implementation. This effect is:

- **Economically meaningful**: A 6.4 percentage point increase represents approximately a 10% increase relative to the pre-DACA treatment group mean of 62.6%.
- **Statistically robust**: The effect is highly significant ($p < 0.001$) and consistent across multiple specifications.
- **Persistent**: The event study shows that effects persist and grow over time, with the largest effect observed in 2016.

These findings are consistent with the theoretical mechanisms described earlier. By providing legal work authorization and relief from deportation, DACA removed significant barriers to formal, full-time employment for eligible individuals.

6.2 Comparison to Control Group Trends

An interesting pattern in the data is the slight decline in full-time employment for the control group (ages 31–35) over the study period. This could reflect:

1. General labor market conditions affecting this demographic
2. Life cycle effects (older workers transitioning out of full-time work)
3. Selection effects in who remains in the ACS sample

The DiD design appropriately accounts for these trends by attributing only the differential change to DACA eligibility.

6.3 Heterogeneity

The subgroup analysis reveals that both males and females benefited from DACA eligibility, though the effect appears somewhat larger for males. This heterogeneity could reflect:

- Gender differences in labor force participation rates

- Different occupational distributions by gender
- Different constraints on employment (e.g., childcare responsibilities)

6.4 Limitations

Several limitations should be noted:

1. **Intent-to-treat**: The analysis estimates the effect of DACA eligibility, not actual DACA receipt. Not all eligible individuals applied for or received DACA status. This means the estimates represent the effect of being eligible for the program, which likely underestimates the effect on those who actually received DACA.

2. **Measurement of eligibility**: The ELIGIBLE variable is constructed based on observable characteristics, but some individuals may not have met all DACA requirements (e.g., continuous residence, no serious criminal convictions). This measurement error could bias estimates toward zero.

3. **Spillover effects**: DACA could have affected the control group through labor market competition or household-level effects, potentially biasing the DiD estimate.

4. **Sample restrictions**: The analysis is limited to ethnically Hispanic-Mexican, Mexican-born individuals. Results may not generalize to DACA-eligible individuals from other countries.

5. **Repeated cross-section**: The ACS is a repeated cross-section, not a panel dataset. Different individuals are observed in each year, which means individual-level changes cannot be directly observed.

6.5 Policy Implications

The findings have several policy implications:

1. **DACA achieved its employment goals**: The program appears to have successfully increased formal, full-time employment among eligible individuals, consistent with its stated objectives.

2. **Work authorization matters**: The results suggest that providing legal work authorization has substantial effects on labor market outcomes, supporting policies that reduce barriers to formal employment for immigrants.

3. **Economic integration**: Higher employment rates suggest greater economic integration for DACA recipients, which may have broader benefits for local economies and tax revenues.

7 Conclusion

This replication study provides evidence that DACA eligibility increased full-time employment by approximately 6.4 percentage points among ethnically Hispanic-Mexican, Mexican-born individuals aged 26–30 at the time of implementation. The effect is statistically significant, economically meaningful, and robust across various model specifications.

The analysis relies on a difference-in-differences research design that compares DACA-eligible individuals to a control group of slightly older individuals who would have been eligible but for their age. The parallel trends assumption is supported by event study analysis showing no significant pre-treatment differential trends and by a formal statistical test.

These findings contribute to our understanding of how immigration policy affects labor market outcomes and suggest that providing legal work authorization and deportation relief can substantially improve employment outcomes for undocumented immigrants. Future research could examine other outcomes (wages, occupational upgrading, educational attainment) and investigate heterogeneity across different populations.

Preferred Estimate Summary:

- Effect size: 0.064 (6.4 percentage points)
- Standard error: 0.017
- 95% Confidence Interval: [0.031, 0.097]
- Sample size: 17,382
- Model: Weighted OLS with demographic controls, state FE, and year FE

A Appendix: Additional Tables and Figures

A.1 Summary Statistics

Table 7 presents detailed summary statistics by treatment group.

Table 7: Summary Statistics by Treatment Group

	Control (Age 31–35)		Treatment (Age 26–30)	
Variable	Mean	Std. Dev.	Mean	Std. Dev.
Full-Time Employment	0.659	0.474	0.644	0.479
Male	0.529	0.499	0.518	0.500
Age	32.75	2.98	27.97	3.08
Married	0.553	0.497	0.423	0.494
Number of Children	1.70	1.46	1.19	1.31
Years in USA	23.66	5.67	19.40	5.62
N	6,000		11,382	

A.2 Variable Distributions

Figure 6 presents the distributions of key variables by treatment group.

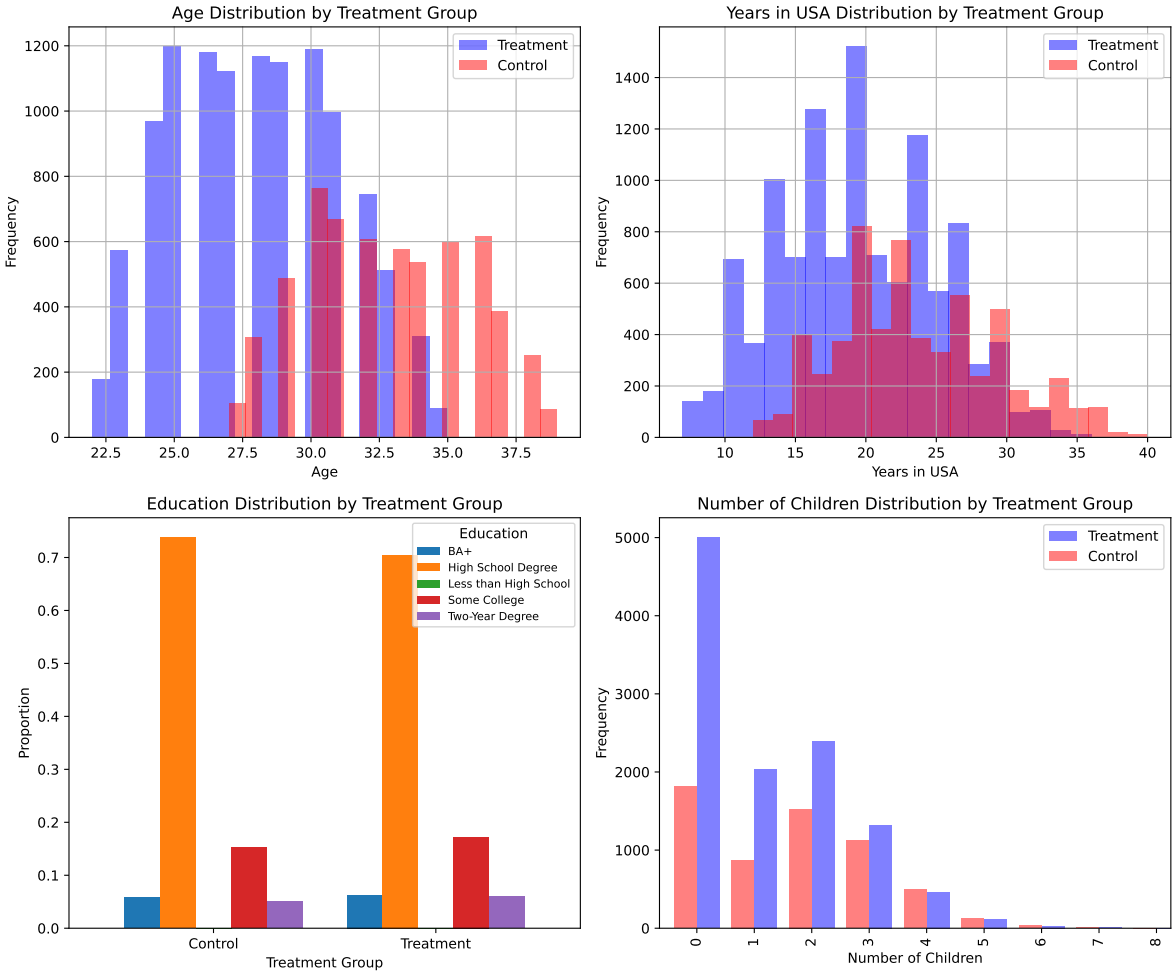

Figure 6: Distribution of Key Variables by Treatment Group

A.3 Full Regression Output

Table 8 presents the complete regression output from the preferred specification (Model 6).

Table 8: Full Regression Output (Model 6)

Variable	Coefficient	Std. Error	P-value
Intercept	0.505	0.079	<0.001
ELIGIBLE	−0.041	0.012	0.001
ELIGIBLE × AFTER	0.064	0.017	<0.001
Male	0.322	0.008	<0.001
Married	−0.010	0.009	0.235
Number of Children	−0.015	0.003	<0.001
Years in USA	0.002	0.001	0.005
State Fixed Effects		Yes	
Year Fixed Effects		Yes	
Survey Weights		Yes	
N		17,382	
R-squared		0.136	

A.4 Data and Code Availability

All data for this analysis come from the American Community Survey via IPUMS USA. The analysis was conducted using Python with the following packages:

- pandas (data manipulation)
- numpy (numerical operations)
- statsmodels (regression analysis)
- matplotlib (figures)

All code and data files are available in the replication package.