Long Beach Pledge Study

Pre-Analysis Plan

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Abstract: This study assesses the economic and sociological effects of a guaranteed income program on low-income single- parent households in Long Beach, California.

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1. Design of the GI program and the study

In 2022, the City of Long Beach launched the Long Beach Pledge, a Guaranteed Income Program distributing $500 per month for 12 months to a first cohort of 250 low-income households in Long Beach. The implementation partner for the program, the Fund for Guaranteed Income (F4GI), opened the online application process in December 2022 and randomly assigned eligible applicants between treatment and control groups. In 2024, the City of Long Beach expanded the program to a second cohort of 200 low-income households. Similarly, the application process opened in January 2024 and eligible applicants were randomly assigned between treatment and control groups.

The research study is a mixed methods study that **focuses on single-parent households** that applied and were determined eligible for the Long Beach Pledge. The focus on single parent households is due to research interest in this target population. It also addresses challenges in program design due to different eligibility criteria across cohorts and noncompliance. The study includes three online surveys: a baseline survey conducted before applicants were informed that they were selected to participate in the program, a mid-program survey 6 months after payments started and a post-program survey 2 months after payments stopped. It also includes, for each cohort, 30-40 online or phone interviews with program participants 6 months after payments started and 15-20 follow-up interviews with the same program participants 2 months after payments stopped.

For the quantitative analysis, we will pool data from Cohort 1 and Cohort 2 across the mid-program and post-program surveys, resulting in an unbalanced sample with two time points per household at most. As such, our main estimating equations will use a pooled OLS specification, which allows us to include all available observations and maximize sample size. Panel data estimation with household fixed effects will be reserved for a smaller subset of households that completed all three surveys (baseline, mid-program, and post-program), and will be used for exploratory analysis to study within-household changes over time.

The qualitative component of the study complements the quantitative analysis by providing insights into household experiences with the guaranteed income program. It will help identify potential mechanisms of impact and deepen our understanding of the lived realities behind the observed quantitative patterns.

2. Disbursement of GI

Payments of $500 were made each month for 12 months to both cohorts. Disbursement of the GI was managed by the Fund for Guaranteed Income (F4GI). Participants were given full information, including: size of the payments, when they will receive the payment, and when they will end. Payments for cohort 1 started in April 2023 and ended in March 2024 and for cohort 2

they started in late March-April 2024 and ended in March 2025. Transfers were made each month via a payments platform that enabled four payment methods.

3. Sample selection and enrollment

3.1. Program Eligibility

For cohort 1, eligibility was limited to households with children/dependents under the age of 18, at or below 100 percent of the federal poverty level in 2022, who rely on a single earner and who are located in the 90813 zip code in the City of Long Beach. For cohort 2, eligibility included households with children/dependents under the age of 18, at or below 100 percent of the federal poverty level in 2023, located in one of five Long Beach zip codes 90802, 90804, 90805, 90806, or 90810. The difference in eligibility criteria between cohort 1 and 2 include location as well as the number of income earners in the household. There were no other requirements or program eligibility. Undocumented households and formerly incarcerated populations were not excluded.

3.2. Study Eligibility

Eligibility for the study included households who applied and were eligible for the Long Beach Pledge and who were determined to be a single-parent household. A single parent household were households who reported that they did not have a spouse and that the parent/stepparents of their dependents were not members of their households. Thus, single parents/guardians could include both households where there is just one adult with children, and households with multi-generational households, households where the applicant's adult children also reside, etc.

3.3. Recruitment, random assignment and enrollment

Recruitment efforts included an official announcement on the City of Long Beach website, a local and social media campaign as well as online meeting with local community non-profits and stakeholders to announce the start of the program and its expansion. To participate, people were asked to fill out a short online application which asked for their name, birthdate, email address, mailing address, phone number, number of household members, number of minors in the household, and whether household income is below or above the calculated 100% poverty threshold. They were asked to upload documentation with proof of income and proof of residency (address). Based on the responses and documentation provided in the initial application, eligibility for the program was determined by the City of Long Beach and the Fund for Guaranteed Income.

To further establish eligibility for the study, applicants underwent a verification process which included an additional online survey asking about the relationship and age of each member of their households.

After verification was done, eligible program applicants were randomly assigned between treatment and control groups. Program quotas were followed where for cohort 1 the quota was 250 households and for cohort 2 – 200 households. Following random assignment, the applicants underwent an onboarding process of benefits screening and counseling during which some applicants dropped out. As a result, for cohort 1, due to the low number of applications some members of the control group who were NOT single parents were re-assigned to treatment. For cohort 2, 210 applicants were originally assigned to treatment with 10 serving as a buffer group to satisfy program quotas in case of drop out. Those who were never offered treatment from the buffer group were re-assigned to the control group. The following table provides data on the number of treated single parents who participated in the study:

	Single parents offered treatment	Single parents who received treatment	Single parent in the control group	Total study participants	
Cohort 1	184	174	79	263	
Cohort 2	170	162	302	472	
Total	354	336	381	735	

4. Econometric Specifications

4.1. Data collection

The data collection for the study is ongoing. As stated above, data is collected only for single parent program participants where cohort 1 is 184 treated and 79 households and cohort 1 is 170 treated and 302 households. Data is collected via online surveys at three points: before the program starts and applicants are notified that they are assigned to the program, in the middle, and after it ends for both cohorts. Phone/online audio interviews are conducted with single-parent program participants who received treatment where 30-40 interviews are conducted in the middle of the program and 15-25 follow-up interviews are conducted with the same participants after the program ends. The following table details the timeline of the study data collection vis-à-vis the payments schedule.

LONG BEACH PLEDGE TIMELINE OF KEY EVENTS		
Date	Event	Cohort
Early April 2023	Baseline survey	Cohort 1
Late April 2023	Payments start	Cohort 1
November 2023	Mid-program survey and interviews	Cohort 1
February 2024	Baseline survey	Cohort 2
March 2024	Payments end	Cohort 1
March-April 2024	Payments start	Cohort 2

June–July 2024	Post-program survey and interviews	Cohort 1
October–November 2024	Mid-program survey and interviews	Cohort 2
February-March 2025	Payments end	Cohort 2
June 2025	Post-program survey and interviews	Cohort 2

4.2. Weighting

We will explore the use of population weights to improve the external validity of the study. First, weighting may help address differences in sample composition across cohorts. For example, Cohort 1 was drawn exclusively from the predominantly Hispanic 90813 ZIP code, while Cohort 2 includes a broader set of ZIP codes in Long Beach with more racial and demographic diversity. Second, the use of an online application process for recruitment may have introduced selection bias by favoring more tech-savvy applicants. Applying population weights may help adjust for these design-related challenges and better align the analytic sample with the broader population of single-parent households in Long Beach.

4.3. Balance Check

To assess balance, we will regress baseline covariates on treatment assignment for each cohort to verify that randomization produced comparable treatment and control groups. Specifically, we will examine covariates included in the main estimating equation and measured at the time of application: age, number of people in the household, number of minors in the household, an indicator for the respondent being Black-, an indicator for the respondent being Hispanic, and an indicator for the respondent being White.

Weights will be applied as described in the weighting section. We will test for covariate-specific imbalances and assess joint significance using a Wald test or seemingly unrelated regression (SUR). If any notable imbalances are identified, we will conduct robustness checks including covariate-adjusted regressions.

4.4. Attrition

We will assess attrition at the mid- and post-program survey waves by testing whether survey nonresponse is systematically related to treatment assignment. Specifically, we will estimate a linear probability model regressing an indicator for survey nonresponse on treatment status. These analyses will be conducted separately by cohort, consistent with the within-cohort randomization design.

We will also examine whether attrition is associated with baseline covariates by testing whether attrition status can be predicted using characteristics measured at application, including age, household size, number of minors, and race/ethnicity. Within the subsample of attriters, we will test whether baseline characteristics differ by treatment status.

In pooled attrition models, we will include cohort fixed effects to adjust for systematic differences in response rates across cohorts. If warranted, we will test for treatment × cohort

interactions to assess whether attrition effects differ across cohorts. Where evidence of differential attrition is found, we will implement robustness checks using covariate adjustment, bounding methods, or reweighting.

4.5. Estimating Equations

We will pool data from Cohort 1 and Cohort 2 across the mid-program and post-program surveys, resulting in an unbalanced sample with two time points per household at most. As such, our main estimating equations will use a pooled OLS specification, which allows us to include all available observations and maximize sample size. We will estimate intention-to-treat (ITT) effects and use instrumental variables to estimate treatment-on- the-treated (TOT) (using treatment assignment as an instrument for receiving treatment).

The main estimating equation across both cohorts is

$$Y_{it} = \alpha + \beta_1 \cdot \mathrm{T}_i + \beta_2 \cdot Post_t + \beta_3 \cdot (\mathrm{T}_i \times Post_t) + \delta \cdot \mathrm{C}_i + \gamma' X_i + \varepsilon_{it}$$

where

- β_1: Treatment effect at mid-program
- β_2 : Difference in outcomes between post- and mid-program for the control group
- β_3: Change in treatment effect from mid-program to post-program
- $\beta_1 + \beta_3$: Treatment effect at post-program
- $Post_t$: Dummy variable equal to 1 for post-program data, 0 for mid-program
- T_i: Treatment assignment indicator (ITT) effect, 1 if the applicant household is offered $500 dollars (including households in both cohorts 1 and 2), 0 otherwise
- C_i: Dummy for Cohort 2 (1 if Cohort 2, 0 if Cohort 1)
- X_i: Vector of control covariates measured at the time of application including age, number of people in household, number of minors in household, an indicator of the respondent being Black, an indicator of the respondent being Hispanic, an indicator of the respondent being White.
- ε_{it}: Error term, clustered at the household level because we might have multiple respondents per household in mid and post-program survey.

Due to differences in eligibility criteria across cohorts, we also intend to estimate heterogeneous treatment effects across cohorts. The estimating equation changes to:

$$Y_{it} = \alpha + \beta_1 \cdot T_i + \beta_2 \cdot Post_t + \beta_3 \cdot (T_i \times Post_t) + \beta_4 \cdot Cohort_i + \beta_5 \cdot (T_i \times C_i) + \beta_6 \cdot (T_i \times Post_t \times C_i) + \gamma' \cdot X_i + \varepsilon_{it}$$

- β_1: Treatment effect at mid-program for Cohort 1
- β_2: Difference in outcomes at post-program vs. mid-program for the control group
- β_3: Change in treatment effect from mid- to post-program for Cohort 1
- β_4: Mean difference in outcomes between Cohort 2 and Cohort 1 in the control group
- β_5: Difference in mid-program treatment effect for Cohort 2 vs. Cohort 1

- β_6: Additional change in treatment effect from mid- to post-program in Cohort 2
- $\beta_1 + \beta_5$: Treatment effect at mid-program for Cohort 2
- $\beta_1 + \beta_3$: Treatment effect at post-program for Cohort 1
- $\beta_1 + \beta_3 + \beta_5 + \beta_6$: Treatment effect at post-program for Cohort 2

4.6. Longitudinal Analysis

We want to perform exploratory analysis using only households who completed all three surveys (baseline, mid, and post). We want to capture within-household changes in outcomes over time and isolate the treatment effect at each wave.

The following fixed effects regression model estimates that:

$$Y_{it} = \alpha_i + \lambda_t + \beta_1 \cdot (T_i \times Mid_t) + \beta_2 \cdot (T_i \times Post_t) + \varepsilon_{it}$$

where,

- α_i: Household fixed effect, controls for time-invariant unobserved heterogeneity
- λ_t: Time fixed effect (for wave), controls for time-specific shocks common to all units
- β_1: Treatment effect at mid-program relative to baseline
- β_2: Treatment effect at post-program relative to baseline
- Mid_t : Dummy variable for mid-program wave (1 if mid, 0 otherwise)
- $Post_t$: Dummy variable for post-program wave (1 if post, 0 otherwise)
- T_i: Treatment assignment indicator (1 = assigned to treatment, 0 = control)
- ε_{it}: Error term clustered at the household level

5. Multiple Comparisons Correction

To adjust for multiple comparisons during analysis, we define an index or focal variable for each of several outcome families. We then apply the false discovery rate across these summary variables (Anderson, 2008). The correction will be applied across outcomes, but not across the survey waves or cohorts treatment arms. We will not adjust for multiple inference within outcome families.

6. Outcome Variables

Each outcome will be constructed as an standardized index measure based on selected online survey questions.

Primary outcomes

- Housing security index
- Food Security Index
- Indebtedness index
- Mental health index
- Physical health index
- Children mental health index
- Children physical well-being index
- Parent-child relationship index

Secondary outcomes

- Access to benefits index
- Access to healthcare index
- Employment
- Education and technical training index
- Access to childcare