Pre-analysis Plan for "The Impact of an Unconditional Cash Transfer during Homelessness: Experimental Evidence from Illinois"

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Abstract

This project aims to study the impact of a large one-time cash transfer to families with children who are in emergency homeless services. The project will evaluate how such a cash transfer impacts future homelessness and housing stability more broadly. We also plan to study how the assistance affects recipients' well-being and mental health, labor market participation, use of other government programs, criminal justice contact, and children's educational outcomes. After recruiting adults with children staying at emergency shelters and transitional housing across the state of Illinois, we randomly assign participants to a treatment group who received an unconditional $9,500 cash transfer and a control group who received $500.

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1 Introduction

Access to safe and stable housing allows families to live with security and promotes children's healthy development and educational engagement (Evans et al., 2019). However, only about a quarter of households who are eligible for public housing assistance receive some form of subsidy, while the supply of affordable housing has dramatically declined in recent decades (Watson, 2017; for Housing Studies, 2016). At the same time, homelessness is rising in many states across the U.S., with people of color continuing to be over represented among the unhoused population (Joint Center for Housing Studies, 2023). As a result, some 1.1 million students nationally experience homelessness each year with possible negative impacts on children's academic and socio-emotional development (National Center for Homeless Education, 2012). Within this context, an unrestricted cash transfer could help families stabilize their housing and address a wide range of challenges that may have precipitated the housing crisis.

In collaboration with the Illinois Office of Preventing and Ending Homelessness (IOPEH) at the Illinois Department of Human Services (IDHS), this project is evaluating a cash transfer pilot for homeless families through a randomized controlled trial. The pilot, Illinois Stability Investment for Family Housing (SIFH), is offering a one-time cash transfer of $9,500, versus a counterfactual of receiving $500. We seek to answer the following research questions:

1.1 Research questions:

1. Are one-time cash transfers to homeless families with children effective at reducing current and future homelessness?
2. Do one-time cash transfers affect the well-being of recipients and their families?
3. Are one-time cash transfers to homeless families with children cost effective?

2 Research strategy

2.1 Recruitment

Recruitment occurred via referrals from case managers in a Continuum of Care (CoC) facility serving homeless families such as emergency shelter, transitional housing, or street outreach. Eight CoC's across Illinois participated: Chicago, Cook County, St. Clair County, Kane County, Lake County, Sangamon County, Will County, and Peoria County. Working with IDHS and the University of Chicago Inclusive Economy Lab (IEL), we invited organizations working with homeless families within those eight

CoCs to participate in the SIFH pilot. Participating organizations' staff attended information sessions where they were provided detailed information on the SIFH pilot and its eligibility requirements, and were given access to the online application portal. Case managers then informed potential participants at their organizations, who were screened for eligibility, asked for informed consent, and then randomized into either the treatment group ($9,500) or the control group ($500).

2.2 Eligibility criteria

The eligibility criteria for the program were:

- The individual was referred by a case manager in a participating CoC facility/organization (e.g. emergency shelter, transitional housing facility, or street outreach organization serving unhoused people).
- The individual met the U.S. Department of Housing and Urban Development (HUD) definition of literal homelessness as demonstrated by being in the Homeless Management Information System (HMIS) OR met the Category 4 definition of homelessness, Fleeing/Attempting to Flee Domestic Violence[1]
- The individual must be 18 years or older when applying.
- The individual must be accessing services with a child 17 years of age or younger, or self-attest to being pregnant.
- The individual must be willing to consent to participate in the program.
- The individual must be a Legal Permanent Resident and/or Citizen of the United States.
- The individual must not already be working with a permanent supportive housing provider to find a home or the recipient of a HUD housing voucher. Families with offers for rapid rehousing or are looking for a place through this program ARE still eligible to apply.
- The individual must not be receiving Social Security Insurance (SSI) or have any family member(s) in your household who are receiving SSI benefits[2]

Eligibility was determined through a three-part screening process. First, the case manager was made aware of the criteria and asked to only refer individuals meeting the criteria. Second, applicants submitted self-attestations that they met all the criteria as part of the application. Third, an approved manager at the CoC facility reviewed the HMIS client identifier and application details for those referred, and verified that,

[1]The pilot was extended to serve families experiencing domestic violence during the last round of randomization in round 1.

[2]This eligibility criteria was set because SSI benefits could not be protected in this program.

to the best of their knowledge, the applicant met the eligibility criteria. Applicants needed to meet all aspects of eligibility to participate in the SIFH pilot.

2.3 Application

After being referred, individuals applied to participate in the SIFH pilot through an online application. Applications were completed jointly by the applicant and their case manager.[3] Consent for the program and research was collected at the time of the application. Program participation required consent to share their past and future interactions with continua of care as recorded in the HMIS with the research team. Additional optional research consent was collected for surveys as well as three other optional consents for (1) linking to other administrative data, (2) linking children to educational records, and (3) linking to data on arrests and court activity. Initial information on age and demographics were collected as part of the application process. Data on contact information for payment purposes was also collected. In addition, applicants were offered an incentivized baseline survey that could be taken directly after the application was complete. Across all surveys issued by the research team, $50 incentives were provided for successful completion (including the baseline). Participants were allowed to select their payment preference: ACH transfer or issuance of a virtual debit card.

2.4 Assignment to treatment

Individuals were assigned to treatment at random in three waves of randomization. Randomization was done in waves to minimize the time between application and payment receipt given the high need population involved. Within each wave, randomization was stratified by continuum of care, with 60 percent of applicants from each continua of care assigned to treatment.[4] Waves spanned approximately two weeks, with the application opening May 3, 2023 and wave randomization occurring May 17, June 1, and June 15. Those assigned to the control group were placed on a random-order waitlist in the case not all treatment offers were taken up during initial treatment outreach. Table 1 reports the number of individuals assigned to treatment and control in each wave of randmization. Table 2 reports the number of treatment and control assigned in each strata.

[3] In some instances where CoC facilities were understaffed, IEL staff trained in the program helped participants apply to the program.

[4] Sixty percent of applicants were assigned to treatment based on the number of applications received at the time of first randomization and projections to guarantee the use of all available funds.

Table 1: Treatment assignment by randomization wave

Randomization Date	Treatment	Control	Ratio
May 17, 2023	58	38	0.604
June 1, 2023	118	79	0.599
June 15, 2023	121	81	0.599

Notes: This table reports the number of applicants assigned to treatment by wave with stratification by continuum of care. Incomplete, ineligible and duplicate applicants were omitted prior to randomization. A treatment assignment ratio of 0.6 was implemented within each strata. Any remaining units that would put a continuum in excess of this ratio were allocated to the largest continuum (Chicago).

Table 2: Treatment assignment by strata

Continuum of Care	Geographic Area	Treatment	Control	Ratio
All Chicago	City of Chicago	177	116	0.604
Alliance to End Homelessness	Suburban Cook County	55	37	0.598
Home for All	Peoria	18	12	0.600
Kane County	Kane County	16	11	0.593
St. Clair County	E. St. Clair	15	10	0.600
Lake County	Lake County	7	5	0.583
Heartland	Sangamon County	7	5	0.583
Will County	Will County	2	2	0.500

Notes: This table reports the number of applicants assigned to treatment strata (continuum of care). Incomplete, ineligible and duplicate applicants were omitted prior to randomization. A treatment assignment ratio of 0.6 was targeted within each strata. Any remaining units that would put a continuum in excess of this ratio were allocated to the largest continuum (Chicago).

2.5 Randomization Checks

We performed several checks to ensure the randomization procedure was working as expected. Within each randomization wave, probability of treatment assignment was assessed by strata to ensure small sampling did not systematically over-represent any given continuum of care. Balance tests were conducted with strata fixed effects across a series of characteristics collected in the application. Balance was assessed within each wave of treatment assignment. Table 3 reports overall balance. There are small differences in consent to use administrative data between treatment and control groups. This arose by chance, as consent was collected prior to randomization and did not factor in to the randomization algorithm in any way.

Table 3: Treatment assignment balance

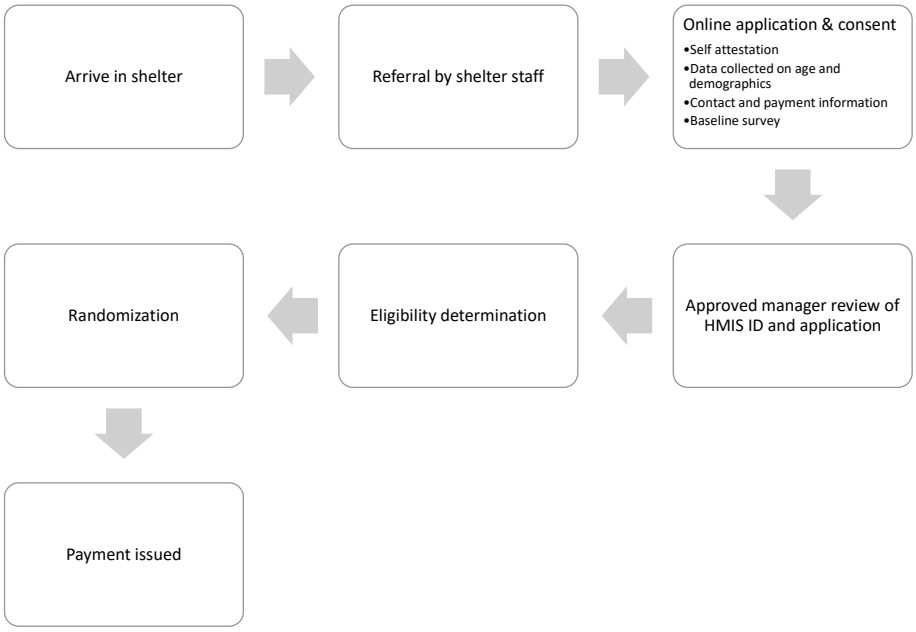
	Control Mean	Difference	Diff. SE	Diff. p-value
Expected household size	3.222	0.064	(0.129)	0.619
Children in housing	2.000	-0.005	(0.122)	0.970
Children elsewhere	0.182	-0.006	(0.062)	0.929
Age (years)	30.939	0.57	(0.789)	0.471
Female	0.909	0.047**	(0.022)	0.032
Hispanic/Latinx	0.131	-0.016	(0.03)	0.602
Asian	0.005	0.002	(0.007)	0.820
Black/African American	0.783	-0.008	(0.036)	0.818
white	0.192	-0.024	(0.032)	0.457
Has ACH account	0.657	0.018	(0.042)	0.675
Administrative consent	0.859	0.058**	(0.028)	0.042
Gave optional SSN	0.520	0.05	(0.045)	0.277
Child administrative consent	0.727	0.085**	(0.038)	0.025
Survey consent	0.894	0.005	(0.028)	0.861
Joint test				0.534

Notes: This table reports summary statistics of applicant characteristics by treatment assignment. The last column presents the p-value for the null of equality of the treatment-assigned and control means, controlling for applicant continuum of care. Note that balance was iteratively tested across each wave during the enrollment process. The last row presents the p-value for the null of equality of all differences to zero.

2.6 Intervention

Those randomized into treatment received $9,500 through either direct ACH transfer or issuance of a virtual debit card, while those randomized to control were offered $500 through a similar process. Payments were issued within 7 business days after each wave's randomization was complete. All participants offered either transfer amount were successfully contacted and received the payment, resulting in a 100% take-up.

Figure 1: Research strategy: visual representation



3 Data collection and survey instruments

This project uses a mixture of administrative and survey-based data. Below, we describe each in more detail.

3.1 Administrative data collection

Participating in the program required consent for sharing data with the Inclusive Economy Lab on future CoC contact, including shelter stays, as recorded in the HMIS for the purpose of this study. Additional consent was requested for three other broad areas of administrative data, but was not a requirement for participation:

1. Parental consent for linking their data to other administrative data sources such as benefits records (80% of participants).
2. Parental consent for linking to employment data with SSN provided (55% of participants)
3. Consent on behalf of their children to release administrative records of their dependents such as educational records (78% of participants).
4. Parental consent to link to criminal justice records including arrests (49% of participants).

3.2 Follow-up surveys

We additionally collected consent for future contact from the research team for follow-up surveys or any other type of research activities such as qualitative interviews.

Those consenting to surveys were offered a $50 incentive to complete a baseline at or soon after application completion. For those who consented to being contacted for follow-up surveys (90%), follow up surveys will be administered at 90, and 180 days, with a plan for continued follow up surveys every six months for the next two years (i.e. 90 days, 180 days, 12 months, 18 months, and 24 months post randomization).

3.3 Data processing

Data processing, storage, retention, and steps taken to keep data confidential will follow the protocol included in the IRB for this project: IRB23-0562 at the University of Chicago.

4 Empirical Analysis

4.1 Outcomes

We organize outcomes into the following levels:

1. **Topic.** E.g. homelessness and housing instability; income and employment; government assistance; crime, safety and victimization; mental health, well-being, and life satisfaction; and children's outcomes.
2. **Family.** These are groups of outcomes within a specific topic, such as "homelessness and housing instability". We will adjust for multiple comparisons within each family. We also pre-specify which families of outcomes we see as primary, and which we see as secondary.
3. **Outcome.** These are the specific outcomes we will study within each family. For example this could include days in an emergency shelter, number of additional CoC contacts, self-reported homelessness, and self-reported housing instability.
4. **Outcome measures.** Some outcomes may be composites of multiple outcome measures, such as an index of multiple survey questions designed to measure mental health.

4.2 Topic 1: Homelessness and housing instability

4.2.1 Family 1: Homelessness *[primary]*

1. Number of nights spent in CoC homeless services since the cash transfer (based on HMIS records). *[primary]* Outcomes defined on 90 day intervals.
2. Any CoC homeless service use while experiencing literal homelessness in the last 90 days (based on HMIS records). We will take into account the recruitment window from shelters for the first 90 outcome window *[primary]*
3. Number of nights spent in CoC homeless services or any other housing provided through the CoC since the cash transfer (based on HMIS records). *[secondary]* Outcomes defined on 90 day intervals.
4. Any CoC engagement in the last 90 days (based on HMIS records). *[secondary]* Outcomes defined on 90 day intervals. We will take into account recruitment window from shelters for the first 90 outcome window.
5. Any survey-based measure of recent homelessness within the most recent month. *[secondary]*
6. Any CoC homeless service re-entry in the last 90 days (based on HMIS records). *[exploratory]*

4.2.2 Family 2: Other housing instability *[secondary]*

1. Answered yes to: "Do you think you will be living in the same place a month from now?" This will be encoded as 0 if responded No to the lead-in question "Do you currently live in a house or apartment or have your own room in a house or apartment? (This could include living with friends or family members). *[primary]*
2. To the question "Please select all of the places where you have slept or rested over the last month:" selected: "A program that offers permanent housing, offers free group housing for families, or pays for a hotel or motel room." *[primary]*
3. To the question "Have you moved in the last month?" answered "Yes" or "Yes, twice or more". *[secondary]*
4. Number of observed addresses (address histories constructed from commercial address histories, supplemented with address histories from IHDS if permissions can be obtained). *[exploratory]*
5. Answered yes to "Have you moved to a new town or city in the last 3 months?" *[exploratory]*

4.3 Topic 2: Income and employment

4.3.1 Family 1: Wage income *[primary]*

1. IDES quarterly earnings (total reported earnings in the prior complete quarter, relative to the timing of the follow-up (90/180/365)). *[primary]*
2. Cumulative IDES quarterly earnings since treatment (measured at the time of follow ups (90/180/365)). *[primary]*
3. Answer yes to "Do you currently have a job or work you do for pay?". *[primary]*
4. Answer to "Over the last month, how much money did you make from working?" (continuous variable set to the mid-point of each bin) *[primary]*
5. An indicator for any positive earnings reported to IDES for the quarter (any reported earnings in the prior complete quarter, relative to the timing of the follow-up (90/180/365). *[secondary]*
6. A running sum of indicators for any positive earnings reported to IDES for the quarter (quarters with any positive wage income since the start of the intervention). *[secondary]*

4.3.2 Family 2: All income sources *[secondary]*

1. Total income from all sources over the last 30 days (continuous variable set to the mean of each bin). *[primary]*
2. Do you have any extra money saved up? *[primary]*

4.4 Topic 3: Government assistance

4.4.1 Family 1: Administrative-based outcomes *[primary]*

1. Cumulative SNAP or TANF benefits since treatment . *[primary]*
2. Received any SNAP or TANF benefits in the last 30 days. *[primary]*
3. Selected yes to receiving "Government aid for families or for buying food (such as TANF, Illinois Link, EBT, SNAP, or food stamps)", "Disability payments (such as Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI)", or "Unemployment benefits". *[primary]*
4. Selected yes to receiving "Government aid for families or for buying food (such as TANF, Illinois Link, EBT, SNAP, or food stamps)". *[secondary]*
5. Selected yes to receiving "Disability payments (such as Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI)". *[secondary]*
6. Selected yes to receiving "Unemployment benefits". *[exploratory]*

4.5 Topic 3: Crime, Safety, and Victimization

4.5.1 Family 1: Criminal Justice Involvement *[primary]*

1. Any arrest since the start of the program (measured at follow-up dates). *[primary]*
2. "Over the last 30 days, did you sleep or rest in any of the following places?": selected (1) jail or police custody. *[secondary]*
3. Number of arrests since the start of the program. *[secondary]*

4.5.2 Family 2: Safety and Victimization *[primary]*

- "How satisfied are you with how safe you feel?" (treated as linear on z-scored version of 1-10 scale). *[primary]*
- Answered yes to "Were you a victim of a crime in the past 90 days?" *[primary]*
- Answered yes to: "Was someone else in your household a victim of a crime in the past 90 days?" *[primary]*

4.6 Topic 4: Mental health, well-being, and life satisfaction

4.6.1 Family 1: Mental Health *[primary]*

1. The total score on the PHQ-4 questionnaire for anxiety and depression. Following standard practices for the PHQ-4, scores will be assigned to each question ranging from 0 (Not at all) to 3 (Nearly every day) and the total score will be the sum of the scores assigned to each question. *[primary]*
2. Over the last 30 days, would you say your health is: Binary which is 1 if responded "Excellent" or "Very good" *[primary]*
3. Over the last 30 days, would you say your child or children's health is: Binary which is 1 if responded "Excellent" or "Very good" *[primary]*
4. Total score on perceived stress questions where "never" is assigned a score of 0 and "very often" is assigned a score of 4. The individual questions are:
    - In the last month, how often have you felt that you were unable to control the important things in your life?
    - In the last month, how often have you felt confident about your ability to handle your personal problems?
    - In the last month, how often have you felt that things were going your way?
    - In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

[primary]

4.6.2 Family 2: Well being *[primary]*

1. Answered "almost always" or "most of the time" to: In the past 30 days, how often were you or your children hungry because you didn't have enough food? *[primary]*
2. Index made from life satisfaction scales:
   - All things considered, how satisfied are you with your life as a whole these days?
   - How satisfied are you with your standard of living?
   - How satisfied are you with your health?
   - How satisfied are you with how safe you feel?
   - How satisfied are you with your future financial security?

   [primary]
3. For the question "In the past 30 days, how often were you or your children hungry because you didn't have enough food? (Choose the best answer.)", we will construct a binary indicator corresponding to the split that gives closest to a 50/50 split in the control group starting with "Almost Always" and working down the options *[primary]*

4.7 Topic 6: Children's outcomes

4.7.1 Family 1: Early-childhood education *[primary]*

1. Are any of your children who are under the age of 5 enrolled in daycare or educational programs in the last 30 days? (conditional on having children under the age of 5). *[primary]*
2. Enrolled in any CPS-based pre-k or childcare program in the past year. *[primary]*

4.7.2 Family 2: School stability and attachment *[primary]*

1. Percent of days absent from school in the last semester (relative to standard follow-up dates based on surveys) *[primary]*
2. School switches since treatment (relative to standard follow-up dates based on surveys, normed by the number of semesters enrolled in school since treatment). *[primary]*
3. Years of student having an STLS flag (normed by number of years enrolled in school since treatment). *[primary]*

4. Any STLS flag in the past year (normed by number of years enrolled in school since treatment). *[secondary]*
5. Student had an individualized learning plan in the school year prior to follow-up. *[secondary]*
6. Student was chronically absent (percent of days absent greater than 10%) in the prior semester, relative to the follow-up date). *[secondary]*

4.7.3 Family 3: Juvenile criminal justice involvement *[primary]*

1. Any arrest since the start of the program (measured at follow-up dates). *[primary]*
2. Any arrest for a violent offense since the start of the program (measured at follow-up dates) *[primary]*
3. Number of arrests since the start of the program. *[secondary]*
4. Number of arrests for a violent-offense since the start of the program. *[secondary]*

4.8 Other covariates

We have information on other covariates from three sources: (1) the application, (2) prior HMIS records, and (3) the baseline survey. We will group these into the set of covariates we observe for all participants (1 and 2), and those we only have for participants who completed the baseline survey.

From the application we observe: household size, number of children, number of children elsewhere, age, female, Hispanic/Latinx, asian, Black/African American, white, reported SSN, payment method choice, and consents to three other administrative linkages. From past HMIS records we observe total prior recorded days in HMIS records, current days in current shelter stay, shelter of residence, CoC, and other types of HMIS contact.

From the baseline survey we observe detailed information on past homelessness, duration of current homelessness, where respondents have stayed over the past month, the last time the respondent has a place of their own, why they had to leave that place, age of first homelessness, cause of first homeless spell, if they were ever homeless as a child, current physical disability, current psychiatric or emotional condition, if any child has a health condition, measures of stress and anxiety, past work in the last month, time last employed full time, if they would like a job (if currently unemployed), sources of income, total income in the last month, total income from work in the last month, total income from work in the last year, and highest level of education.

4.9 Treatment effects

The paper will focus on estimating "Intent to treat" parameters given the 100% take-up rate. This is true for both treatment and control, as randomization occurred after applying. We will estimate the ITT using a model of the form:

$$Y_i = \beta_0 + \beta_1 T_i + \mathbf{X_i}'\gamma + \epsilon_i$$

where X_i include fixed effects, including interactions with CoC and which randomization wave an individual was in. X_i will also include baseline covariates to help improve precision following the procedure described in Section 4.11.

4.9.1 Primary outcome sensitivity

We use baseline administrative data and survey consent rates to estimate minimum detectable effect sizes (MDES) for each of our primary outcomes within each family. Given the selective nature of the targeting criteria, we present MDES in standard deviations for continuous outcomes and the arcsine transformation for proportional outcomes as recommended by Cohen (1988). All estimates are made using a two-sided test, with a 0.05 significance level and 0.80 power expectation. Measures are aggregated to match data linking consent categories, and dependent estimates account for both consent and average dependent counts per household:

- CoC homeless service engagement: MDES of 0.258 SD
- Criminal justice head of household engagement: 0.368 SD
- Employment and earnings head of household outcomes: 0.348 SD
- All other head of household administrative outcomes: 0.288 SD
- Dependent administrative outcomes: 0.206 SD
- Survey outcomes: 0.271 SD

4.10 Heterogeneous effects

All heterogeneity analysis will be treated as secondary outcomes. We will consider the following splits of the data when conducting heterogeneity analysis:

1. Families with children under age of 5 vs families withouth children under the age of 5.
2. Black vs Non-Black families (defined by self-identified race of the applicant).
3. If respondents identified this as their first homeless spell or not.

4.11 Regression adjustment to increase precision

We will report regression-adjusted treatment effects following Bloniarz et al. (2016), which uses LASSO to select among baseline covariates to use for regression adjustment, and then includes the selected covariates as controls in the regression as specified in Section 4.9. We will also include fixed-effects for randomization wave and CoC. We will report these estimates and standard errors as our main estimates.

4.12 Adjusting for multiple comparisons

We will follow Anderson (2008) in correcting for multiple comparisons. As described in Section 4.1, we ex-ante categorize outcomes into Topic and Family. We construct index outcomes for each family. This reduces the number of outcomes and tests for general evidence of an effect within a family of outcomes. Following Anderson (2008), we will then control for the familywise error rate (FWER) when testing across outcome indexes. We will then compute the sharpened FDR-adjusted p-values that control for the rate of false positives within the family of test to be no more than the nominal level. We will additionally report comparison-specific p-values and standard errors.

For each outcome, we flag it as primary, secondary, or exploratory. In addition, we flag families of outcomes as primary or secondary. The index outcomes for each family will be constructed using the primary outcomes. FWER adjustments will first be conducted across all primary families, and then again using primary and secondary families. FDR adjustments for primary outcomes will be run across primary outcomes within a family. FDR adjustment for secondary outcomes will be applied across the number of primary and secondary outcomes (Allcott et al., 2020).

4.13 Attrition

We will test for attrition and differential attrition from the surveys and administrative data. If either proves to be an issue, we will present results which correct for attrition.

5 Conclusion and known limitations

The SIFH Pilot is likely to re-open for future cohorts in 2024. If successful, this second wave will be included in the analysis. This will affect our pre-registered intervention end date. One known limitation for this study is that while we received consent for linkage to various administrative data sets, these agreements are not yet fully in place, and some may turn out to be infeasible. We will report which data sets we receive permission to link to.

References

Allcott, Hunt, Luca Braghieri, Sarah Eichmeyer, and Matthew Gentzkow, "The Welfare Effects of Social Media," *American Economic Review*, March 2020, *110* (3), 629–76.

Anderson, Michael L., "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects," *Journal of the American Statistical Association*, 2008, *103* (484), 1481–1495.

Bloniarz, Adam, Hanzhong Liu, Cun-Hui Zhang, Jasjeet S. Sekhon, and Bin Yu, "Lasso adjustments of treatment effect estimates in randomized experiments," *Proceedings of the National Academy of Sciences*, 2016, *113* (27), 7383–7390.

Cohen, J., *Statistical power analysis for the behavioral sciences (2nd ed.)*, Hillsdale,NJ: Lawrence Erlbaum., 1988.

Evans, William N, David C Philips, and Krista J Ruffini, "Reducing and preventing homelessness: A review of the evidence and charting a research agenda," 2019.

for Housing Studies, Joint Center, "The State of the Nation's Housing," Technical Report, Harvard University 2016.

Joint Center for Housing Studies, "The State of the Nation's Housing," Technical Report, Harvard University 2023.

National Center for Homeless Education, "Student Homelessness in America: School Years 2018-19 to 2020-21," Technical Report 2012.

Watson, Nicole Elsasser, *Worst case housing needs: 2017 report to Congress*, US Department of Housing and Urban Development, Office of Policy Development, 2017.