1 Introduction

The Stockton Economic Empowerment Demonstration (SEED) is the country’s first city-led guaranteed income (GI) pilot. It is a collaboration between the Office of Mayor Michael Tubbs, the Economic Security Project (ESP), and the residents of Stockton. In 2019, SEED will begin providing at least 100 Stocktonians with a GI of 500 USD per month for 18 months. The income will be distributed monthly through prepaid debit cards that will be issued in each recipient’s name. Since the income is “guaranteed,” there are no work requirements or restrictions on how the money can be spent. The purpose of this pre-analysis plan is to outline the intervention, research questions, design and methods guiding the evaluation.

2 Research Design and Methods

The project relies on a randomized controlled trial with parallel mixed methods design (QUAN + QUAL), containing quantitative and qualitative research strands anchored by participatory action research (PAR), and informed by evidence-based learning agendas (Teddlie Tashakkori, 2008; Urban Institute, 2018). Data from each strand will be integrated at the conclusion of the intervention and will inform the dissemination strategy alongside the purposive political sample (Miles Huberman, 1994; Teddlie Tashakkori, 2008). While the
quantitative data will inform the PAR strands and qualitative sampling, meta-inferences between strands will not occur until the conclusion of the experiment (Teddlie Tashakkori, 2008).

2.1 Research Questions

The primary research questions are: (1) How does GI impact volatility? (2) To what degree do changes in income volatility alter financial well-being, psychological distress, and physical functioning? (3) How does GI generate agency over one’s future?

2.2 Selection of Participants and Procedures

2.2.1 Stage 1: Address Based Random Sampling

Participant recruitment will begin with a random sample of households within census tracts at or below Stockton’s household AMI of $46,033, providing a representative sample of Stockton residents within those census tracts. Forty-two census tracts meeting this criteria have been selected. Delivery Sequence File (DSF) lists, which contain all active residential USPS addresses, have been purchased from a licensed vendor. Based on the proportion of the population represented in each census tract, a percentage of addresses will be drawn from each. An invitation mailer to participate in SEED and its associated research will be sent to 1,200 households drawn from this list. The mailer will not be addressed to any one person in the residence; rather, the household will decide whether to and who may participate. The mailer will direct potential participants to a web-based survey which will collect household-level baseline data, as well as individual level data on key outcomes of interest (detailed in section 3 below).

2.2.2 Stage 2: Random Assignment to Groups

Any potential participant not meeting inclusion criteria, e.g. at least 18 years of age at time of baseline data collection, and a current Stockton mailing address, will be removed from the initial pool of potential participants. Individuals will be randomly assigned to one of three groups: treatment, active control, and passive control. The treatment group (n=130) will receive the intervention of 500 USD per month for 18 months, and will participate in qualitative and quantitative data collection activities. The active control group (n=200) will not receive the intervention, and will participate in compensated qualitative and quantitative data collection activities. The passive control group (n= 700) will not receive the intervention, and will not participate in primary data collection activities. Secondary administrative data will be collected for all groups. Balance checks will be conducted at this stage, to ensure balance of sociodemographic characteristics across the treatment and control conditions.
A subsample of the treatment and active control groups, (n=25) will voluntarily elect to participate in a purposive political sample (Miles Huberman, 1994; Teddlie Tashakkori, 2009) aimed at informing public discourse on deservedness, the benefits cliff, and GI, through media engagement and storytelling activities. Data will be collected on this purposive sample, and will be analyzed separately from the main treatment and control groups. If the sample is not significantly different from the treatment and active control groups, their data will be included in the final analysis. Their experiences will also be triangulated with key findings across all strands.

2.2.3 Stage 3: Participant Notification and On-boarding

Members of the treatment group will be notified of their inclusion in the treatment group by phone call, voice message, and text message. During the phone call, the SEED staff will invite the participants to attend a one-on-one on-boarding appointment. The onboarding appointment will include: informed consent and benefits counseling, introduction to key SEED and research staff, and enrollment with the pre-paid debit card provider. The purpose of benefits counseling is to ensure participants are fully aware of any risks associated with the disbursements potentially interacting with their health insurance or benefits. Members of the active control will be notified of their status in the active control group by telephone, and will be invited to continue participation in all data collection activities. Members of the passive control group will not receive notification of their group status.

2.3 Data Collection

2.3.1 Parallel (Quantitative and Qualitative)

Baseline quantitative data will be collected three months prior to disbursement and at three-month intervals for a total of 24 observation months, or nine total observation points. While the intervention will last for 18 months, we will continue collecting data over a two-year period. In December 2018, all individuals will complete a baseline survey. Then, they will be placed in rolling panels to respond to confidential online surveys, entering data for demographic and household composition; the primary outcomes of psychological distress, physical functioning, and financial well-being; and the secondary outcomes of trust, hope, mattering, time use, family dynamics, food security, material hardship, agency, and perceived stress and well-being. Topic cycling will limit bias and respondent fatigue. All members of the treatment and active control groups will also participate in two 30-day data collection periods at six months and 18 months using a brief text-based survey focused on income volatility and mental health indicators. The aim is to determine how the introduction of GI may smooth spending patterns and volatility alongside measures of anxiety and depression. Members of treatment and active control groups will participate in in-depth interviews approximately 1-2 times per year. In collaboration with
the Children’s Data Network at the University of California, we will retrieve retrospective and prospective data from government agencies for treatment and control in order to track participant outcomes through integrated data systems beyond the study time limitations.

### 2.3.2 Sequential (Participatory Action Research)

The PAR strand will focus on the translational nature of GI as a city-led policy through the use of a community-facing dashboard, and focus groups with stakeholders not enrolled in the intervention. Strand III will begin with a community-led process of discovery based on developing an evidence-based policy-making learning agenda (Urban Institute, 2018). Stocktonians will co-construct a learning agenda focused on what they believe a municipality should know about income volatility and the benefits of a GI. The PAR group will engage in a community narrative process to unearth shared constructs, and inform data construction for the community dashboard. The learning questions, learning activities, and practice-based activities in the agenda will inform the National League of Cities Basic Income Toolkit. The aim is to anchor constituent voices in policy development surrounding GI to inform other municipalities, mayors, and policymakers interested in replicating the intervention. At the conclusion of disbursements, these findings will be triangulated into meta-inferences with the other strands of research (Teddlie Tashakkori, 2008). The shared group will also generate their own research questions to inform future hypothesis generation surrounding GI.

<table>
<thead>
<tr>
<th>Month</th>
<th>Quantitative Surveys</th>
<th>Text-based Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2018</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>February 2019*</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>May 2019</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>August 2019</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>November 2019</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>February 2020</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>May 2020</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>August 2020**</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>November 2020</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>February 2021</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

* Disbursements begin
** Disbursements end
3 Measures

3.1 Primary Outcomes

The overall aim of this research is to determine the effect of treatment (GI) on the the primary outcomes. These include changes in financial well-being, psychological distress, and physical functioning. These outcomes were chosen for three reasons. First, from prior research on income volatility, we anticipate the GI intervention to produce detectable effects on the primary outcomes with the given sample size. Second, we are committed to providing rigorous and early results to inform other GI experiments currently underway, including Y Combinator’s Basic Income Study and the Income and the Developing Brain Study. Both the primary and secondary outcomes presented herein are similarly conceptualized and measured in other experiments, ensuring appropriate cross-study comparisons. Third, these outcomes are critically important to the broader social science community and to laying the foundation for policy proposals aimed at evolving the social safety net.

3.1.1 Financial Well-being

We hypothesize that the intervention will produce detectable reductions in income volatility and unsecured debt. Income volatility data will be measured monthly through self-reporting and calculated by the coefficient of variation, similar to the method used by the U.S. Financial Diaries study. To determine the coefficient of variation, we will divide the standard deviation of monthly income by the mean of monthly income (Morduch ll Siwicki, 2017). Monthly income volatility will be measured at nine observation points across the study using retrospective questioning in the online survey to produce 24 data points. Monthly self-reported income volatility data will also be triangulated through text-based responses in two 30 day windows. During the 30 day window participants will receive a daily prompt to complete short survey responses via SMS on well-being and financial indicators. Use of the coefficient of variation will allow for comparisons of volatility of both higher and lower income households.

We chose debt reduction due to descriptive evidence suggesting that when provided a cash transfer in the form of a one-time lump amount such as the EITC, a matched savings disbursement, or the Alaska Permanent Fund dividend, individuals use that money to pay down debt (Harstad, 2017; Shaefer, Song, ll Shanks, 2013; Halpern-Meekin, Edin, Tach, ll Sykes, 2015). Debt reduction will be measured through selected questions from the Survey of Consumer Finances (2016) related to unsecured debt, including debt from credit cards, education loans, and medical bills.

3.1.2 Psychological Distress and Physical Functioning

The health indicators of physical functioning and psychological distress will be collected quantitatively via the SF-36 and the Kessler 10 (RAND Corporation, 2018; Kessler, et al., 2002) within a longitudinal survey and through in-depth
qualitative interviews. This outcome was chosen because of empirical evidence that involuntary job loss, inadequate or insecure employment, and other proxies of income volatility are related to greater risk and severity of depressive symptoms (Catalano, et al., 2010; Rohde, Tang, Osber, ll Rao, 2016) as well as qualitative evidence indicating some association of income volatility proxies to accounts of substantial anxiety (Morduch Schneider, 2017; Halpern-Meekin, Edin, Tach, Sykes, 2015).

3.2 Secondary Outcomes

While there is more limited theoretical or empirical evidence for these secondary outcomes, they were selected because of their importance in providing insight into the well-being of Stocktonians, their representation in the literature and potential for detectable effects. Time use will be measured by time spent on employment, care work, education, and community or civic engagement, and selected questions will be drawn from the American Time Use Survey (U.S. Department of Labor Statistics, 2011). Family dynamics and parenting will be measured via the Confusion, Hubbub, and Order Scale (Matheny, 1995). Food security will be measured through the Household Food Insecurity Access Scale (Coates, Swindale, Bilinksy, 2007). Material hardship will be measured via selected questions from the Survey of Income and Program Participation (SIPP, 2008). Agency will be measured through the Hope Scale (Snyder et. al., 1991). Perceived stress and well-being will be measured by the Perceived Stress Scale (Cohen, Kamark, Mermelstein, 1994) and the Mattering Index (Elliot, Kao, ll Grant, 2004). Additional secondary outcomes related to the use of public benefits, healthcare utilization, and interactions with the child welfare system will be assessed via administrative data collection in partnership with the Children’s Data Network at the University of Southern California (USC) School of Social Work.

3.3 Additional Measures

Other quantitative measures include age, gender, education, employment status, and housing cost, quality, and stability. Surveys will also include space for qualitative responses to network strain, and the degree to which participants considered how disbursements may interfere with safety net benefits, such as food stamps, health insurance, or Supplemental Security Income. Care will be taken to preserve the confidentiality of all participants’ identity in the study, deterring excludability (SUTVA) violations. All study participants will be advised of the social network risks associated with disclosing participation in the study. Specifically, trained benefits counselors will talk through the risk of family and friends knowing about a person being in the treatment group and then requesting access to resources of the treatment participant. Other stakeholders including the research team and program staff will sign a confidentiality agreement. However, aside from these precautions, because of the “unconditional” - and thus, non-intrusive - nature of this study, no further measures will be taken.
to place restrictions on individuals self-reporting their treatment statuses. Due to the small number of experimental subjects compared to the vast populace of Stockton, it is unlikely that there will be interference between treatment and control group participants. However, it is possible that a treated subject will affect individuals within her own “network” of family and friends. These network individuals may be considered non-experimental units, and we will collect data from the recipient about the extent to which they are supporting friends and family with the GI.

4 Analytic Plan

Below we present two models. The first is a conventional Ordinary Least Squares (OLS) model used to estimate the effects of the treatment on the outcomes. The second is a Hierarchical Linear Model (HLM).

The OLS model of the average treatment effect makes use of a battery of baseline covariates to help increase statistical power:

\[ Y_{iE} = \beta_0 + \beta_1 T_i + \beta_2 Y_{iB} + \gamma X_i + u_i \]  

(1)

in which \( Y_{iE} \) represents the outcome of interest for subject \( i \) measured at endline, \( T_i \) represents the treatment status of subject \( i \), \( Y_{iB} \) represents the outcome of interest for subject \( i \) measured at the baseline, and \( X_i \) is the set of all other baseline characteristics requisite for covariate adjustment for subject \( i \); lastly, \( u_i \) is the error term.

To further investigate the GI intervention on the treatment group, Hierarchical Linear Modeling (HLM) with repeated observations and unconditional growth will be used. Level 1 of the model will test individual growth curves, or within-subject variation along the primary outcomes, and Level 2 will determine difference in treatment response, or between-subject variation (Lininger, Spybrook, Cheatham, 2015; Spybrook, et al., 2011). The model then appears as:

\[ Y_{t,i} = \pi_{0,i} + \pi_{1,i} \alpha_{t,i} + e_{t,i} \]  

(2)

where

\[ \pi_{0,i} = \beta_{0,0} + r_{0,i} \]

\[ \pi_{1,i} = \beta_{1,0} + r_{1,i} \]

where \( t, i \) is time within individuals, \( \pi \) represents coefficients, \( \alpha \) represents predictor variables with \( \alpha_{t,i} \) representing time between observations, and \( e \) represents residuals. For Level 2, the between subjects, unconditional growth model model is noted as \( \beta \) representing individual level coefficient, and \( r \) is the residual term.
5 Attrition Concerns

Study participants will be compensated for each survey that they complete. This payment scheme hopes to incentivize the completion of the questionnaires across the length of the study. Some degree of attrition, nonetheless, is still inevitable. While SEED will replace the participants who attrit, this refresher sample will not be included in the calculation of treatment effects. The refresher sample can be used for supplementary analysis on the temporal effects of the cash transfers.

6 Sources


