

CASE STUDY 1: SUMMER YOUTH EMPLOYMENT PROGRAMS IN CHICAGO

Theory of Change & Measurement



Youth paint the side of a building as part of a summer youth employment program. Photo: University of Chicago Crime Lab

This case study is based on “[Summer Jobs Reduce Violence among Disadvantaged Youth](#)” by Sara B. Heller (2014), *Science*. The case study also cites [Stopping a Bullet With a Summer Job](#), J-PAL; [J-PAL Voices: The Impact and Promise of Summer Jobs in the United States](#), J-PAL; and [The Promises of Summer Youth Employment Programs: Lessons from Randomized Evaluations](#), J-PAL.

J-PAL thanks the authors for allowing us to use their paper as a teaching tool.

KEY VOCABULARY

Hypothesis¹	A proposed explanation for the effects of a given intervention. We can think of this as a claim to be tested. Hypotheses are intended to be made prior to the implementation of the intervention. E.g., <i>Giving textbooks to students will improve student learning.</i>
Theory of Change	A supposition made at the beginning of a program specifying steps in the pathways through which the intervention(s) could lead to an impact. A theory of change is a structured approach used in the design and evaluation of social programs. It maps the logical chain of how program inputs achieve changes in outcomes through activities and outputs.
Assumption	A precondition that underpins a theory of change or model. An assumption cannot always be directly observed or verified. E.g., <i>When students read textbooks, they learn from them.</i>
Input	An activity carried out as part of a program or intervention. E.g., <i>Textbooks are given to schools.</i>
Output	A step in the planned implementation of a program or intervention – a.k.a. a direct result in response to the inputs. E.g., <i>Students receive textbooks through schools.</i>
Intermediate outcomes	Observable changes or impacts caused by the program that are not the ultimate outcome of interest, but necessary along the way to achieving a final outcome. E.g., <i>Increase in students who have passing test scores for the semester.</i>
Final outcomes	Changes or impacts that are of ultimate interest to researchers and/or program implementers; these are often the overall goals of a program. E.g., <i>Increase in high school graduation rates.</i>
Indicator	An observable metric used to measure an outcome. E.g., <i>Student test scores.</i>
Instrument	The tool used to measure an indicator. E.g., <i>A set of test questions.</i>

¹ These definitions of hypothesis and theory of change are based on those in Module 5.1: Theory of Change from Glennerster and Takavarasha's *Running Randomized Evaluations*.

LEARNING OBJECTIVE

To better understand the conceptual framework of the theory of change and how it informs what research questions to ask, what data to collect, and what outcomes to measure.

SUBJECTS COVERED

Theory of change, defining a hypothesis, selecting indicators, data collection, and measuring outcomes.

INTRODUCTION

For young adults (ages 16-24), access to jobs and other activities during the summer can generate income and foster positive social connections to employer networks and mentors. In the longer term, such opportunities can facilitate access to employment and opportunities. However, many youth in the United States lack access or connections to those opportunities.

Summer youth employment programs (SYEPs), or summer jobs programs, commonly place qualifying youth from low-income families in a part-time, minimum-wage job with a local government agency, community organization, or business for the summer. Youth may also receive mentorship, life skills training, or other services. Cities subsidize the wages of the participants with the help of state and federal grants and local philanthropic support.² As of 2015, each of the fifty most populous cities in the United States had offered a summer youth employment program in the last five years.

SYEPs can have multiple goals, such as providing work experience that may improve future employment prospects and reduce risky (i.e., school drop out, impulsive behavior) or dangerous activity and/or involvement with the criminal legal system. Some youth employment programs aim to increase skills and access to mentorship over the summer with the specific goal of improving educational outcomes for students (like school attendance and school performance). At the time of the evaluation discussed in this case study (2012), researchers estimated that 6.7 million young adults between 16–24 in the United States (or 17 percent of this age group) spent little or no time in school or work in the prior year.³ Research can shed light on whether summer jobs programs successfully achieve their intended outcomes.

This case study will examine a summer youth employment program run by the city of Chicago called One Summer Chicago Plus (OSC+). OSC+ places youth in entry-level jobs and pays the Illinois minimum wage for six to eight weeks. Researchers conducted one randomized evaluation of OSC+ in 2012 and another in 2013.

REFLECTION FROM AN SYEP PARTICIPANT

A summer youth employment program participant shared the potential effects of participating, reflecting: "When you introduce someone to something that's good for them ... they might continue going along that pathway and continue using whatever you're giving them to their advantage." - SYEP participant Habiba Khan, [J-PAL Voices Episode 1](#)

² For more information on summer jobs programs you can review J-PAL's briefcase, [Stopping a Bullet with a Summer Job](https://www.povertyactionlab.org/publication/stopping-bullet-summer-job) (<https://www.povertyactionlab.org/publication/stopping-bullet-summer-job>).

³ See Fein and Hamadyk (2018).

SUMMER YOUTH EMPLOYMENT PROGRAMS IN CHICAGO

THE INTERVENTION

In 2012, youth were eligible to apply for the OSC+ program if they attended one of thirteen Chicago high schools with high rates of violence. Over 1600 youth aged 14 to 21, from qualifying high schools applied for the program, but there were fewer available slots than applicants. In light of this, 730 applicants were offered slots in the program by random assignment and 904 applicants were assigned to the comparison group. Of those 730 applicants randomly selected to be offered OSC+, half were offered 25 hours per week of paid employment, while the other half were offered 15 hours per week of paid employment and ten hours per week of social and emotional learning programming (for which the youth were also paid the hourly minimum wage).

In terms of demographics, over 90 percent of the participants were eligible for free or reduced-price lunch (a proxy for poverty) and almost all were Black. Students came from neighborhoods with a history of redlining and discrimination, resulting in high rates of unemployment, poverty, and crime. About 20 percent had been previously arrested. Additionally, on average, participants had missed six weeks of school during the previous year and had grade point averages around a 2.3 (on a 4.0-point scale).

The social and emotional learning components of the program were based on cognitive behavioral therapy principles and aimed to train youth to manage aspects of their thoughts, emotions, and behavior that might interfere with effectiveness in a job setting.⁴ Adult mentors, who served about ten students each, provided employment-related guidance to all participants. The program cost about \$3,000 per participant, including wages paid to participants.

Group	Components
Treatment group 1 (n=365)	25 hours/week paid employment & mentor
Treatment group 2 (n=365)	15 hours/week paid employment & mentor + ten hours/week of social and emotional learning
Comparison group (n=904)	Not offered a spot in the program

In 2013, the OSC+ program allowed out-of-school youth to apply and limited applicants to young men in order to study the effects for young men disconnected from the education system. About 41 percent of applicants were referred directly from the criminal justice system; the rest were recruited from an applicant pool for broader summer programming in Chicago. In this year, 5,216 young men ages 16-22 applied. By random assignment, 2,634 were assigned to the treatment group and 2,582 applicants were

⁴ Cognitive behavioral therapy is a short-term, goal-oriented psychotherapy treatment that takes a hands-on, practical approach to problem solving. Source: “Cognitive Behavioral Therapy.” Institute for Quality and Efficiency in Health Care. Last updated September 8, 2016.

assigned to the comparison group. The treatment group was offered summer jobs plus a social-emotional learning curriculum, with invitations to additional structured activities throughout the following year, or they were put on a waitlist for this program.

TABLE 2: OSC+ 2013 TREATMENT AND COMPARISON GROUP ASSIGNMENT	
Group	Components
Treatment (n= 2,634)	Summer job & mentor + social-emotional learning + invitations to structured activities throughout the year
Comparison (n=2,582)	Not offered a spot in the program

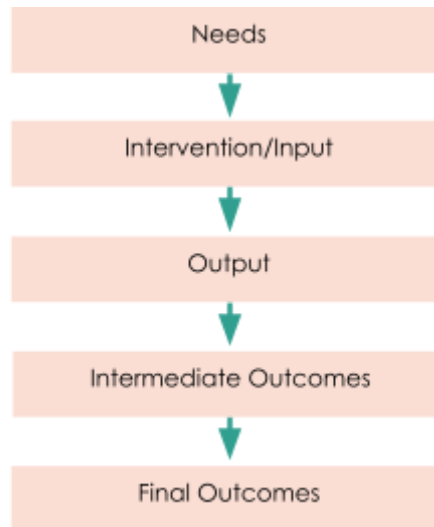
DISCUSSION TOPIC 1: HYPOTHESES

1.1 What is the challenge the program is attempting to address? Discuss with your group potential goals the OSC+ team had in mind when designing the program.

1.2 What is a **hypothesis** that an impact evaluation of this program can test?
 (Reminder: A hypothesis is an explanation for the desired effects of the intervention. For example, the hypothesis of a different intervention might be “*Giving textbooks to students will improve student learning.*”)

THEORY OF CHANGE

A theory of change (ToC) identifies the causal link between the intervention and the final outcome(s).



Definitions can be found in the key vocabulary chart above.

Note on commonly confused terms:

- An **output** is a direct result of the inputs, and can help assess whether a program is being implemented as planned. For example: “students receive textbooks.”
- An **outcome** is an observable change or impact caused by the program. For example: “change in students’ reading scores.”

DISCUSSION TOPIC 2: MAPPING A THEORY OF CHANGE

We will now map a theory of change, which can help you decide what to measure about your program as you implement it, in order to assess its effectiveness.

2.1 Using the following table, draw out a theory of change that connects the intervention to intended intermediate and final outcomes.. Use the guiding questions below to help you fill out the first column. The assumptions column will be filled in based on question 2.2, and the measurement column will be filled in based on Discussion Topic 3 (both below).

- What are **inputs** and **outputs** of the intervention that will help us test our hypothesis?
- What are the **intermediate outcomes** the program is seeking to change?
- What are the **final outcomes** that the program is seeking to change?

	THEORY OF CHANGE (DISCUSSION TOPIC 2.1): What happens at this step?	ASSUMPTIONS (DISCUSSION TOPIC 2.2): The conditions underlying each step of the theory of change.	MEASUREMENT (DISCUSSION TOPIC 3): Indicators and data sources to provide information on each step.
Needs			
Intervention/Inputs			

	THEORY OF CHANGE (DISCUSSION TOPIC 2.1): What happens at this step?	ASSUMPTIONS (DISCUSSION TOPIC 2.2): The conditions underlying each step of the theory of change.	MEASUREMENT (DISCUSSION TOPIC 3): Indicators and data sources to provide information on each step.
Outputs			
Intermediate Outcomes			
Final Outcomes			

2.2 What are the necessary conditions/assumptions underlying this theory of change? We may or may not be able to measure all of these assumptions directly. What needs to occur or be present for this chain to work? Enter the assumptions for each step in the middle column of the table above.

MEASUREMENT: INDICATORS AND DATA COLLECTION

Defining a main hypothesis as well as program inputs, outputs, and outcomes at the beginning of an evaluation is a crucial step that will help you determine what data/information to collect. The ideal data collection plan measures indicators at every stage of the theory of change. Therefore, before deciding which data to collect, you need to:

- Clearly define the inputs, outputs, and outcomes you are targeting
- Identify the ways the intervention is thought to affect the outputs and outcomes

For each step of the theory of change, you must identify **indicators** (what to measure) and **instruments** (tools for data collection, a.k.a. methods for measurement). If possible, you should also collect data to validate the assumptions underpinning your theory of change.

For survey data in particular, it is important to consider participants' response process (i.e., how they interpret the survey questions) and how this and other factors may affect every step of measurement. It is also crucial to be able to link each data source to the unit of observation (e.g., for administrative data), which requires collecting data to match records.

DISCUSSION TOPIC 3: MEASUREMENT

3.1 Which indicators would you measure at each step of your theory of change? In other words, what are possible indicators for the inputs, outputs, intermediate outcomes, and final outcomes? How would you collect data for each of these indicators? Use questions a, b, and c below to fill in the right side of the table under discussion topic 2 (return to the table above).

- Inputs and outputs:** How would you find out whether the OSC+ intervention is operating as planned?
- Intermediate outcomes:** How would you measure OSC+'s intermediate outcomes as described in your theory of change?
- Final outcomes:** What would you measure in order to assess whether the intervention has the intended impact?

3.2 What challenges might arise during the data collection and measurement processes? Reflect on challenges for both administrative (secondary data) and survey data (primary data).

- Administrative data:** Is administrative data available for what needs to be measured? If protocols for implementing the intervention are unclear, how would this impact the data?

b. **Survey data:** Are survey questions clear and easy to comprehend? How might the wording of survey questions influence or bias survey responses?

c. How might various measurement challenges affect the conclusions researchers draw from the study?

DISCUSSION TOPIC 4: INTERPRETING THE RESULTS

Keep in mind that an impact evaluation is not a “thumbs up” or a “thumbs down” about a program—whatever the results are, valuable information can be gained and critical questions should continue to be asked. For this reason, it is vital to structure evaluations in such a way that a relevant range of outcomes (both long and short term) can be measured.

4.1 Imagine that the study finds that there is no impact of OSC+ on attendance and GPA. As a policymaker, how would you interpret and react to these results?

4.2 The real study by Sara Heller found that across the 2012 and 2013 cohorts, participating in OSC+ caused no significant changes in school attendance or GPA. However, the program led to a significant impact on involvement with the criminal justice system. Across the two cohorts, participating in OSC+ reduced the number of violent crime arrests one year later by 35 percent. How do you interpret these results? As a policymaker, how would you react? What other information might be needed to make policy decisions?

FINDINGS FROM OTHER EVALUATIONS

J-PAL's evidence review "[The promises of summer youth employment programs: Lessons from Randomized Evaluations](#)" presents a comprehensive overview of the experimental evidence on SYEPs in the United States, drawing on thirteen papers examining the programs of four major cities.

The key lessons of the evidence review include, among others, (i) SYEPs consistently reduce involvement in the criminal justice system for participating youth for the duration of the program and at least a year beyond, (ii) for the most part, SYEPs do not increase rates of formal sector employment for the average participant after the program ends, and (iii) the evidence on the role of SYEPs in improving educational outcomes is mixed. Regarding this final outcome, an evaluation found that Boston's SYEP significantly increased high school graduation rates among participating students, partly by reducing dropout and absenteeism rates. The program also increased the GPA of the participants in the first year following the SYEP, but the benefits faded in the second year without the participation in SYEP in the summer.

REFERENCES AND FURTHER READING

Butler, Andrew, Jason Chapman, Evan Forman, and Aaron Beck. 2006. "[The empirical status of cognitive-behavioral therapy: A review of meta-analyses.](#)" *Clinical Psychology Review*, no. 26: 17-31.

Davis, Jonathan, and Sara B. Heller. 2017. "[Rethinking the Benefits of Youth Employment Programs: The Heterogeneous Effects of Summer Jobs.](#)" National Bureau of Economic Research, no. 23443.

Gelber, Alexander, Adam Isen and Judd B. Kessler. 2016. "[The Effects of Youth Employment - Evidence from New York City Summer Youth Employment Program Lotteries.](#)" *Quarterly Journal of Economics* 131, no. 1: 423-460.

Glennerster, Rachel, and Kudzai Takavarasha. 2014. *Running Randomized Evaluations: A Practical Guide*. Princeton: Princeton University Press.

Heller, Sara B., Anuj K. Shah, Jonathan Guryan, Jens Ludwig, Sendhil Mullainathan, and Harold A. Pollack. 2017. "[Thinking, fast and slow? Some field experiments to reduce crime and dropout in Chicago.](#)" *The Quarterly Journal of Economics* 132, no. 1: 1-54.

Institute for Quality and Efficiency in Health Care. 2016. "[Cognitive Behavioral Therapy.](#)" *Informed Health Online*.

J-PAL Evidence Review. 2022. "[The Promises of Summer Youth Employment Programs: Lessons from Randomized Evaluations](#)" Cambridge, MA: Abdul Latif Jameel Poverty Action Lab.

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