

THE LESSONS OF ADMINISTRATIVE DATA:

High-Profile Policy-Relevant Research Powered by Administrative Data



Data gathered by government agencies, school systems, police departments, and hospitals for purposes other than evaluation has powered some of the most important and policy-relevant research produced over the last several years. Compared to new data collected through surveys, administrative data can cost much less, allow for faster turn-around of results, enable long-term follow-up, and improve the accuracy of study findings.ⁱ For these reasons, and in light of the rapidly growing scope of administrative data, expanding access to these data for research purposes is a priority for both policymakersⁱⁱ and academic researchers.ⁱⁱⁱ This document highlights a few examples of landmark studies made possible by administrative data.

THE IMPACT OF HOME COMPUTERS ON ACADEMIC ACHIEVEMENT^{iv}

Administrative data helped show that distributing free computers to students may not have an impact on academic performance.^v A growing number of schools in the United States are distributing laptops to students, even though they are expensive and there is little evidence of their impact on academic performance. Researchers employed a randomized evaluation to assess the impact of home computer use on students' academic achievement in California. Analyses using administrative data and computer use surveys found that the program had no effect (neither positive nor negative) on any educational outcomes including grades, disciplinary action, standardized test scores, and attendance. The use of school-provided administrative data allowed researchers to evaluate educational outcomes for over 1,000 students without concern of measurement error and attrition bias.^{vi}

PROGRAMS TO REDUCE CRIME AMONG AT-RISK YOUTH^{vii}

Administrative data helped illuminate the power of summer jobs programs and cognitive behavioral therapy^{viii,ix} to reduce crime and violence among youth. Using state and city level arrest and incarceration data, school records, and residency data from the Cook County juvenile detention facility, researchers from the University of Chicago Crime Lab found that these programs led to large declines in violent crime, arrests, and recidivism and improvement in academic outcomes. These results ultimately led to vocal mayoral and presidential support of these programs and substantial increases in funding and youth served.

Access to administrative data eliminated the need to track down and survey thousands of youth years after they did (or did not) participate in the programs. Such a survey would have been cost-prohibitive, and obtaining responses from a sufficiently complete sample would have been nearly impossible logistically. Administrative data also alleviated the need to rely on voluntary reports of criminal activity, which are quite unreliable. One study found that survey estimates of arrests understate actual arrests (as reported in arrest data) by more than 30 percent.^x This would be particularly problematic if participants in a crime prevention program are less inclined to report being arrested than non-participants.

SIMPLIFYING FINANCIAL AID PROCESSES^{xi}

Through access to national-level data on college enrollment and financial aid, researchers found that a streamlined aid process improved access to college. Researchers partnered with H&R Block to conduct a large-scale randomized evaluation of the impact of providing financial aid application assistance to low-income adults and dependent children from low-income families.^{xii} For recipients in the treatment group, H&R Block pre-populated some aspects of the free application for federal student aid (FAFSA) and provided personalized assistance and information about financial aid options. Compared to a control group that received a basic brochure on college financial aid, treatment group individuals were more likely to submit the form and receive aid, as measured in U.S. Department of Education data. Records on college registration from the Ohio Board of Regents and the National Student Clearinghouse allowed researchers to track later outcomes for over 25,000 individuals and determine that simply making it easier to apply for financial aid substantially increased the likelihood that individuals with limited means would attend college and stay in college once they enrolled. In recent years, policymakers have increasingly called for simplifying the financial aid process, and a White House report cited this study as the most direct test of the impact of reducing complexity in the financial aid application process.

TUTORING FOR SIGNIFICANT EDUCATIONAL GAINS^{xiii}

Boosting academic achievement and graduation rates for youth from low-income communities is a top policy priority in the United States,^{xiv} but there may be a mismatch between what students need and what current education policies try to provide.^{xv} However, researchers have identified an educational program that improves academic outcomes for students from low-income communities by individualizing instruction through high intensity tutoring embedded during the school day.^{xvi} The University of Chicago Crime and Education Labs partnered with SAGA Education (formerly SAGA Innovations and Match Tutoring prior to that) and Chicago Public Schools to assess this SAGA tutoring model. Researchers selected 9th and 10th grade students as study participants using Chicago Public Schools' administrative records in select partner schools, located primarily in low-income and under-resourced communities in Chicago. In the school year before the intervention, the average study participant had a GPA of 2.1 out of 4; one in six students were diagnosed with a learning disability; and almost twenty percent of study participants had previously been involved in the criminal justice system. Students were randomly assigned to a one-hour tutoring session every day as part of their regular class schedule, in addition to their regular math class. Tutors met with two students at a time and divided instructional time evenly between reviewing foundational skills and working on current topics from students' regular math classes. Tutors targeted instruction based on the needs of individual students.

The results show that students who were randomly assigned to tutoring saw academic improvements, including scoring higher on math exams, earning higher grades in math, and being more likely to pass their other non-math classes than students in the comparison group. Administrative data from Chicago Public Schools allowed researchers to observe test scores, grades, and course failures of over 4,000 students. The availability of Chicago Public Schools data helped researchers measure the effects of this program and demonstrate some of the highest test score gains per dollar spent on tutoring for low-income high school students.^{xvii}

UNDERSTANDING EFFECTS OF NEIGHBORHOODS^{xviii}

Researchers leading the Moving to Opportunity (MTO) experiment used administrative data to comprehensively examine the long-term impacts of housing voucher programs and moves to lower-poverty neighborhoods.^{xix} Through MTO, families were selected by lottery to receive housing vouchers, some of which required families to move to neighborhoods with low poverty rates. Initial and mid-term studies, which leveraged unemployment insurance data, arrest records, college enrollment data, benefits data, and census data found that adults who moved had no change in employment, income, or use of government benefits (although surveys showed they were happier and healthier). However, a long-term follow-up study, made possible by access to tax records, revealed that for young children (less than 13-years-old at the time of the move), moving to a low-poverty neighborhood increased expected lifetime earnings by about \$300,000. This study also found that children who moved were more likely to attend college, attended higher-quality colleges (based on earnings), and lived in neighborhoods with lower poverty rates as adults. Administrative data allowed for long-term follow-up and was critical in assuring equivalent data coverage for both treatment and control groups, a formidable and expensive task with long-term surveys. For instance, recipients of vouchers may be more likely to have moved and thus harder to locate, or they may be more or less likely to be in jail, employed, etc. These concerns of differential coverage across treatment and control group can be mitigated using administrative data.

UNDERSTANDING THE IMPACT OF EXPANDING MEDICAID^{xx}

Using administrative data, researchers studied the expansion of Oregon's Medicaid program to inform one of the most salient political debates of the last decade: the impact of providing health insurance to the uninsured. The state of Oregon's decision in 2008 to allocate application slots in its expanded Medicaid program by lottery offered researchers an extraordinary opportunity to understand the causal impact of the program by comparing the outcomes of lottery winners to lottery losers. In addition to a survey of lottery winners and losers, researchers measured outcomes for over 20,000 individuals using administrative data sources such as hospital records, employment data, and state and federal benefits records. The administrative data allowed researchers to discover a key finding that would have otherwise been obscured by fading memories: When researchers surveyed lottery winners and lottery losers about emergency room use, they found no statistically significant difference. However, by looking at Portland-area hospital records, researchers found that Medicaid increased emergency room use by 40 percent.

Other outcomes measured included health care utilization (use of preventive care and emergency services increased), financial strain (catastrophic expenses and other measures decreased), mental health (depression rates declined), physical health (perceptions of health improved, but measured physical health did not detectably change), and employment and earnings (neither improved). Measuring all of these outcomes for both lottery winners and losers would have likely been impossible through surveys alone.^{xxi}

REFERENCES AND RESOURCES

ⁱ For a guide on using administrative data in randomized evaluations, see Feeney, Laura, Jason Bauman, Julia Chabrier, Geeti Mehra, and Michelle Woodford. 2015. "Using Administrative Data for Randomized Evaluations." *J-PAL North America*.

ⁱⁱ For example, see Office of Management and Budget. 2015. "Building Evidence with Administrative Data." *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2016*, Chapter 7.

ⁱⁱⁱ For example, see Card, David, Raj Chetty, Martin Feldstein, and Emmanuel Saez. 2011. "Expanding Access to Administrative Data for Research in the United States." Working Paper.

^{iv} For an overview, see the J-PAL Evaluation Summary linked here: <https://www.povertyactionlab.org/evaluation/impact-home-computers-academic-achievement-low-income-children-united-states>

^v Fairlie, Robert W. and Jonathan Robinson. 2013. "Experimental Evidence on the Effects of Home Computers on Academic Achievement among Schoolchildren." *American Economic Journal: Applied Economics* 5(3): 211-240.

^{vi} Fairlie and Robinson, "Experimental Evidence," page 213.

^{vii} For an overview, see the J-PAL Policy Insight linked here: <https://www.povertyactionlab.org/policy-insight/reducing-criminal-behavior-through-cognitive-behavioral-therapy>

^{viii} Heller, Sara B. 2014. "Summer jobs reduce violence among disadvantaged youth." *Science* 346 (6214): 1219-23.

^{ix} Heller, Sara, Harold A. Pollack, Roseanna Ander, and Jens Ludwig. 2013. "Preventing Youth Violence and Dropout: A Randomized Field Experiment." NBER Working Paper #19014.

^x Kling, Jeffrey R., Jens Ludwig, and Lawrence F. Katz. 2005. "Neighborhood Effects on Crime for Female and Male Youth: Evidence from a Randomized Housing Voucher Experiment." *The Quarterly Journal of Economics* 120(1): 87-130.

^{xi} For an overview, see the J-PAL Evaluation Summary linked here: <https://www.povertyactionlab.org/evaluation/oregon-health-insurance-experiment-united-states>

^{xii} For an overview and more related research, see the J-PAL Policy Bulletin here: <https://www.povertyactionlab.org/sites/default/files/publications/simplifying-barriers-along-bridge-college.pdf>

^{xiii} Bettinger, Eric P., et al. 2002. "The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment." *The Quarterly Journal of Economics* 127.3 (2012): 1205-1242.

^{xiv} For an overview, see the J-PAL Evaluation Summary linked here: <https://www.povertyactionlab.org/evaluation/boosting-academic-performance-through-individualized-tutoring-chicago-public-high-schools>

^{xv} Ander, Roseanna, Jonathan Guryan, and Jens Ludwig. 2016. "Improving Academic Outcomes for Disadvantaged Youth: Scaling Up Individualized Tutorials." *The Hamilton Project. Policy Proposal 2016-02*.

^{xvi} See Barnum, Matt. 2017. "What If Every Struggling Student Had a Tutor? It Won't Be Cheap, but It Might Be Worth It." *The 74.*; and Cook et al., page 2.

^{xvii} Cook, Philip J., Kenneth Dodge, George Farkas, Roland G. Fryer, Jr., Jonathan Guryan, Jens Ludwig, Harold Pollack, and Laurence Steinburg. "Not Too Late: Improving Academic Outcomes for Disadvantaged Youth." *Institute for Policy Research, Northwestern University. Working Paper Series WP-15-01*, 2015.

^{xviii} Cook et al. found that the "impacts per dollar spent appear to be at least as large as almost any other educational intervention that has been rigorously tested" (page 5).

^{xix} For an overview, see the J-PAL Evaluation Summary here: <https://www.povertyactionlab.org/evaluation/evaluating-impact-moving-opportunity-united-states> and more information on J-PAL's MTO work here: <https://www.povertyactionlab.org/na/cmta>

^{xx} Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. 2016. "The effects of exposure to better neighborhoods on children: New evidence from the Moving to Opportunity experiment." *The American Economic Review* 106.4 (2016): 855-902.

^{xxi} Taubman, Sarah, Heidi Allen, Bill Wright, Katherine Baicker, and Amy Finkelstein. 2014. "Medicaid Increases Emergency Department Use: Evidence from Oregon's Health Insurance Experiment." *Science* 343(6168): 263-8.