

Personalized Information and Prompts to Improve Outcomes for Unemployed Individuals

Andrew Barr, Texas A&M University

Ben Castleman, University of Virginia

Project motivation: A year ago, there were nearly four million individuals who were unemployed for greater than six months. Only one in ten of those individuals will have found a permanent full-time job as of summer 2015 (Krueger et al 2014). While much of this chronic unemployment and underemployment can be attributed to reduced job vacancies, it may also arise because displaced workers lack awareness of quality job and/or training opportunities in their community that are well-aligned with their existing skills and work experience. Policies that provide workers with personalized and simplified information about job and training programs and help with the job search process can help overcome behavioral bottlenecks, improve the matching of potential employees and employers or training programs, and could result in faster and more stable reemployment and greater productivity.

Project summary: The goal of this project is to provide displaced workers with prompts and personalized information to help individuals locate work and/or training opportunities in their communities that are well-matched to their prior work experience. Previous interventions have demonstrated the potential for personalized information, well-timed prompts, and access to assistance to improve education, financial savings, and health outcomes (Bettinger et al., 2012, Castleman and Page, 2015, Hoxby and Turner 2013, Karlan et al., 2010, Kling et al 2012). We are interested in applying similar strategies to help unemployed individuals find jobs by leveraging publicly available data on jobs and training combined with state or proprietary data on work histories.

To identify personalized job opening matches for each displaced worker, we will develop an algorithm—or capitalize on an existing algorithm used by a private-sector job matching company—that leverages data on the transitions of prior job seekers, the preferences and job history of the targeted displaced worker, and information on current job openings and hiring demand for different occupations. While many of the components underlying this algorithm are publicly available online or at a workforce center, they are infrequently provided to job seekers who do not actively seek out the materials. Similarly, while career counselors are available to some workers, it is unclear to what extent counselors typically leverage data to inform their advice to job seekers. For some individuals, the personalized information will act as a supplement to the counseling advice they have already received, while for many others it will provide new information.

To identify personalized training opportunities for each displaced worker, we will inform people who are not currently engaged with state workforce systems of the services that are available to them, facilitate connections with staff at these workforce sites, and provide information about local quality training programs matched to prior work experience.

We will evaluate the impact of these interventions on workforce center utilization and unemployed individuals' subsequent labor market outcomes, including time unemployed, wages, and measures of job match (e.g., job tenure), using preexisting administrative data collected by state and/or federal agencies.

Project questions: We are primarily interested in understanding the extent to which behavioral bottlenecks inhibit reemployment. Does procrastination or present bias result in inefficient search activity or suboptimal outcomes? Do information frictions lead to inefficient job search and poor job match? These questions are central to the design of workforce policy and yet we know very little about the answers.

Research Design: In order to answer these questions, we will implement a large-scale randomized control trial to test the effects of personalized information and prompts on the utilization of services and subsequent labor market outcomes. We have partnered with the Capital Area Workforce Board in the Austin and Travis County areas of Texas to pilot the intervention, and are actively pursuing additional workforce boards as partners. The Capital Area and covers a million workers. Last year, the workforce board directly served 77,438 job seekers. We are also exploring a partnership with a national private-sector company that provides personalized job matching information services for a variety of employers and government and education agencies. The goal of the proposed partnership is to enhance the company's existing algorithm and outreach efforts with more behaviorally-informed and personalized communication to unemployed individuals.

In Texas, we will obtain data on workforce histories from multiple sources: UI records from the Texas Workforce Commission (TWC), Work in Texas, and the Capital Area Workforce Board. The TWC will provide us with access to UI records, which contain information on individual earnings and work duration as well as employer industry and location. While limited in scope, the TWC UI records are administrative data and thus cover all individuals receiving UI benefits.

"Work in Texas" is the online portal for job seekers in Texas. UI recipients are required to register for the system and must input contact information; prior educational attainment; employment status; current enrollment status; job title (standardized); experience; preferred work location; desired minimum pay and working hours; primary language; and prior employer name, job title, job start date, and job duties. Individuals provide additional detail on job skills, work history, and job interests on a voluntary basis. The "Work in Texas" data are substantially richer than the UI data, but they are user-entered and are therefore likely of lower quality.

Finally, the Capital Area Workforce Board collects additional detail for individuals who receive workforce services. These data are primarily for the set of individuals eligible for a particular workforce program, such as WIA, or those who take the initiative to request job-seeking services. Whereas the workforce board collects very detailed information on individuals, the quantity of information varies substantially across individuals and is only available for those receiving workforce services, a fraction of the unemployed population.

Pending the development of our partnership with the private sector job-matching company, we may also have access to extensive worker-specific employment histories from its proprietary databases.

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For the initial pilot, we will randomize job seekers into one of three treatment arms: (1) search encouragement, (2) personalized job matches, and (3) combined. Under the search encouragement treatment, we will send job seekers frequent reminders and encouragement to continue searching for a job. The goal of the reminders and encouragement is to prompt displaced workers, who may struggle with planning or have limited attention, to follow through on their intentions to search for a job.

Under the personalized job matches treatment, we will provide job seekers with personalized job matches. At its core, the job search process is a complicated matching problem that requires job seekers to wade through large amounts of information about themselves and the job market to allocate search effort. Whereas a perfectly rational computer may solve this problem, behavioral economics suggests it may be beyond human computational capacity, particularly for those experiencing the stress of unemployment (Mullainathan and Shafir, 2013). We will utilize existing workforce data on employment histories and job openings data to identify potential job matches for each unemployed individual. We will use the occupation codes and locations contained in these job histories and in currently available jobs to provide job matches and the associated job title, wages, locations, and application procedures.

Under the final treatment, we will send job seekers both search encouragement and personalized job matches. Under all treatments, we will send messages via text, e-mail, or letter depending on the available contact information and whether each individual has opted out of contact via text. We will devote attention to ensuring that the messages are as simple and accessible as possible.

In subsequent experiments, we will provide (1) personalized training recommendations, and (2) prompts to use workforce board services. We will use individual employment histories and characteristics to target individuals likely to benefit from training and recommend quality training programs based on their work history and residence. We can provide personalized information on the likelihood of completion as well as the likelihood of obtaining employment and average earnings for similar individuals who previously participated in a particular program. To identify quality training programs, we will utilize existing data on employment histories linked with certificate and degree data to evaluate training programs.

Using individual employment histories, we will target individuals likely to benefit from additional support from existing services (e.g., WIA). We will facilitate connections between the individuals and counselors and prompt individuals to take advantage of available resources at local One Stop centers.

Researcher qualifications: Andrew Barr is an Assistant Professor of Economics at Texas A&M University who focuses on understanding the role of financial and informational factors in the college enrollment decisions and related labor market outcomes of military veterans and displaced workers. In a recent working paper (with Sarah Turner), he explores the effect of a large-scale government information intervention on the training choices and reemployment outcomes of displaced workers. He finds that a simple letter that encouraged

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training hundreds of thousands of additional individuals to enroll in college. These results serve as motivation for the current project. Barr holds a PhD in Economics from the University of Virginia. He has received funding from the National Science Foundation, the National Academy of Education, the Spencer Foundation, and the American Educational Research Association. His work has been published or is forthcoming in top economics journals, including the *Journal of Human Resources* and the *Journal of Public Economics*.

Ben Castleman is an assistant professor of education and public policy in the Curry School of Education at the University of Virginia who focuses on applying behavioral insights to improve students' educational outcomes. He has pioneered the use of automated, personalized text messaging to provide students and their families with simplified information about their educational options and to facilitate access to professional assistance when they need help. Castleman has partnered with a wide range of educational agencies to implement and evaluate text messaging campaigns aimed at improving college access, affordability, and success. Castleman's work has received extensive attention from senior policymakers at The White House and in Congress and has been published or is forthcoming in top policy and economics journals, including the *Journal of Policy Analysis and Management*, the *Journal of Human Resources*, and the *Journal of Labor Economics*. He is also the author of the forthcoming book *The 160-Character Solution: How Text Messages and Other Behavioral Strategies Can Improve Education*.

We will partner with Heath Prince, director of the Ray Marshall Center for the Study of Human Resources at the University of Texas at Austin, on the implementation of the intervention. Dr. Prince has over fifteen years' experience in the education and workforce development fields as a researcher, project manager, policy analyst, and evaluator.

Budget Categories: Funds will be used primarily to support researcher time; project management for the workforce board; message design, production, and delivery; site visits; and data access costs. We are happy to prepare a more detailed budget if this project would be of interest to the foundation.

References

- Barr, A. & Turner, S. (2015). Aid and encouragement: Does a letter increase enrollment among UI recipients? Working paper.
- Bettinger, E.P., Long, B.T., Oreopoulos, P., & Sanbonmatsu, L. (2012). 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): 1205-1242.
- Castleman, B.L. & Page, L.C. (2015). Summer nudging: Can personalized text messages and peer mentor outreach increase college going among low-income high school graduates? Center for Education Policy and Workforce Competitiveness Working Paper No. 9.
- Hoxby, C., & Turner, S. (2013). Expanding college opportunities for high-achieving, low income students. *Stanford Institute for Economic Policy Research Discussion Paper*, (12-014).
- Karlan, D., McConnell, M., Mullainathan, S., & Zinman, J. (2010). Getting to the top of mind: How reminders increase saving. (No. w16205). National Bureau of Economic Research.
- Krueger, A. B., Cramer, J., & Cho, D. (2014). Are the long-term unemployed on the margins of the labor market? *Brookings Papers on Economic Activity*, 229-280.
- Kling JR, Mullainathan S, Shafir E, Vermeulen LC, Wrobel MV (2012): Comparison friction: Experimental evidence from Medicare drug plans *Quarterly Journal of Economics*, 127:199–235.