



THE PROMISES AND PERILS OF TECHNOLOGY FOR MARGINALIZED JOB SEEKERS

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KEY FINDINGS

- **Underemployed and unemployed job seekers have limited access to social networks** that provide: immediate job search feedback (i.e. from résumés and interviews); mentorship and information about employment opportunities; assistance to help underserved job seekers articulate the skills they have acquired from past jobs; and transportation to interviews or job training sites.
- **The digital collaborative economy, in the current form, offers infeasible solutions to mitigate marginalized job seekers' barriers to employment** (e.g., reliable transportation, education, and social networks).
- **Reliable transportation access is a barrier to employment, yet transportation innovations such as real-time ridesharing do not reach many marginalized job seekers.** While real-time ridesharing services (e.g., Uber and Lyft) offer more reliable access to transportation, these services do not offer flexible modes of payments or non-digital access points, and so they exclude potential riders without bank account or smartphones.
- Lower-income job seekers require low- to no-cost education and training to obtain the skills desired for available jobs and clear pathways to acquire these skills. Low- to no-cost education and technological interventions like Massive Open Online Courses connect learners all over the world hoping to gain new skills. However, **researchers found little tangible evidence that MOOCs actually help learners secure employment, while few learners on MOOC platforms are economically disadvantaged.**
- Rather than expecting all digital employment tools to serve all populations equally, designers and employment advocates should innovate to create applications to meet low-income workers' needs in the job search process. **Job seekers would value the creation of tech tools to provide application feedback and clarify what skills are needed to secure desired employment and where to obtain those skills. All of these attributes are currently lacking from digital job search technologies.**

INTRODUCTION

In November 2019, the United States enjoyed its lowest unemployment rate in almost fifty years—3.5%¹—yet the unemployed were disproportionately people with disabilities,² Black and Latino adults,³ and people without a college degree.⁴ These unequal patterns persist as the COVID-19 pandemic's effects on the economy continue to unfold. After reaching a high of 14.7% in April 2020, the national unemployment rate declined to 6.7% in November 2020, yet the rate for Black and Latino adults remained at 10.3% and 8.4%, respectively.⁵

In the age of technological advances, many U.S. workers rely on digital tools to find work and earn income, including online job boards, digital hiring event flyers, and downloadable résumé templates. At first glance, this digital employment market appears to offer wider access to job opportunities for the underemployed or unemployed. However, since people of color and low-income individuals are disproportionately offline, they are not equally able to access these critical tools. In Detroit, for example, Black households are twice as likely as white households to go without an internet subscription at home.⁶ Here, too, the pandemic exacerbates inequality, since job seekers face restricted access to public spaces to work on résumés or browse job opportunities online. For an inclusive economic recovery to work, we must continue to close the digital divide. But we must also understand how job seekers who are able to get online contend with technologically based employment processes.

In this brief, we explore how technology impacts the job search process for marginalized workers, defined as the disproportionately unemployed and underemployed. We describe the results of several studies conducted in Detroit to understand these job seekers' barriers to employment; their use of technology in the employment process; and their views on how technology could better support employment goals.¹ **Further, we outline a set of recommendations to move toward a more inclusive digital job search market.**

OFFLINE BARRIERS TO ONLINE JOB SEARCHES

Professor Tawanna Dillahunt and her team at the Social Innovations Group conducted a series of studies of low-income job seekers in Detroit to understand their employment challenges and how they interacted with the technology-based job search process. **Limited access to transportation and education were both key barriers to employment for study participants,** similar to what has been documented by other Detroit-focused research.⁷ Further, researchers found that job seekers with disabilities, who can work only a certain number of hours to maintain critical federal benefits, have trouble finding jobs

which meet their requirements. Of course, these individual responses about personal barriers to employment reveal systemic failures to invest in adult education, a robust regional transportation system in the metro area, or a job market that is widely accessible to people with disabilities.⁸

The research team conducted a qualitative study of 15 low-income job seekers in Detroit highlights additional barriers to finding and securing job opportunities in the digital age. Study participants² shared their experiences grappling with **untrustworthy hiring information from unreliable websites**, or sites with “junk” information.⁹ One participant shared his views on a popular website:

■ ■ CRAIGSLIST, ANYBODY CAN POST ON THERE. CRAIGSLIST ISN'T AS TRUSTWORTHY. I USED TO LOOK ON CRAIGSLIST A LOT. I HAVE FOUND A FEW GOOD JOBS ON THERE, BUT MOST OF THEM ARE JUST SCAMS OR WHATEVER. THEY'RE NOT REAL JOBS.¹⁰

Further, more than half (n=8) of study participants shared that they have **limited knowledge of computers and other digital devices**, a major obstacle given the online nature of the modern job search. In particular, formerly incarcerated individuals in search of career pathways, especially those returning from long prison sentences, may have significant gaps in digital literacy.¹¹ While friends and family provide devices and education on how to use smartphones for daily tasks or entertainment, few fill in their loved ones on how to use the internet for the job search, according to another study of 23 people who were previously incarcerated. Researchers noted even more basic barriers to digital job searches. While piloting a digital literacy course for this population, researchers had to include basic topics such as typing, uploading documents, and how to avoid spam, in addition to more relevant topics like how to access online job boards.

In addition, **social networks emerged as one of the most salient barriers to success in the digital employment market.** While many job seekers successfully used online search tools to identify opportunities, they struggled to find social ties to those with more resources who could be helpful in converting these online postings to actual jobs. Job seekers who submitted résumés did not receive feedback regarding why they were not contacted or why they were not hired after interviewing, and they wanted more social connections with insiders who could potentially provide them such feedback.¹² Overall, job seekers who lacked access to social capital were navigating their job search in the dark, and they faced difficulties finding and making the right connections in their own communities.¹³ Only the few job seekers who could leverage existing bridging

¹ This research was supported by the National Science Foundation awards IIS-1665049 and IIS-1717186, the Bill and Melinda Gates Foundation, the University of Michigan's Ford School of Public Policy, and community partners such as Michigan Works! Southeast, the Eastside Community Network, and the Family Independence Initiative.

² Participants were recruited from non-profit organizations that offer services to job seekers. In addition, participants were asked to refer others.

ties in their social networks were able to actually land jobs. One woman explained the value of her connection:

■ [MY BROTHER] BEEN WORKING SINCE HE WAS 18. [...] HE HIRES, HE INTERVIEWS PEOPLE, SO AT HIS JOB, SO I KNEW THAT HE COULD GIVE SOME GOOD INPUT ABOUT WHAT I SHOULD SAY, WHAT I SHOULDN'T SAY, AND, YOU KNOW, HOW TO MAKE MY RÉSUMÉ LOOK MORE ATTRACTIVE TO THE EMPLOYER.¹⁴

As recruiting and hiring processes continue to move online, job seekers have fewer opportunities to meet recruiters or other job seekers in person to build needed social networks.¹⁵ Though LinkedIn offers users the opportunity to connect with people who can help with the job search, few study participants used it.¹⁶ One participant said they had signed up for LinkedIn but had “not seen the full value of it.”¹⁷ LinkedIn is only beneficial, of course, if one has professional networks that could be useful in a job-search. But an additional study found that job seekers with less than a college degree were still in search of those connections.¹⁸ At a structural level, the racial and economic segregation of Detroit from the surrounding metro area may explain Black and Latino job seekers’ challenges finding useful connections, since better-paying jobs, and the networks of individuals who know about them, are disproportionately located in white communities beyond city boundaries.¹⁹

CAN THE COLLABORATIVE ECONOMY CLEAR A PATH TO BETTER EMPLOYMENT?

Given the barriers identified, researchers investigated the use of the collaborative economy among marginalized groups and whether these technologies offered greater access to employment-related opportunities. The collaborative economy brings together networks of individuals online, who seek to swap goods and services without transferring ownership or offering full-time employment; one accesses this marketplace through apps such as Uber, TaskRabbit and Airbnb.²⁰ The collaborative economy also includes technologies which democratize access to typically centralized institutions like finance and education through person-to-person models, such as Kickstarter and Coursera.²¹ **This online marketplace appears widely accessible for those with basic digital literacy and an internet connection, but in practice, lower-income individuals face a range of barriers to benefitting from the collaborative economy.**

PROMISES AND PERILS OF REAL-TIME RIDESHARING TO INCREASE TRANSPORTATION ACCESS:

Transportation is critical for employment, but the costs of car use and limited reach of public buses prevents many Detroit residents from gaining full access to job markets. To understand whether ridesharing services could mitigate the employment challenges around transportation, Social Innovations Group researchers helped 13 low-income individuals living in

transportation-scarce areas of Detroit use Uber to meet their transportation needs.²²

Limited payment methods, cost, and low digital literacy made the use of real-time ridesharing services infeasible for some residents, since Uber requires non-cash payment, a smartphone, and comfort with online applications. An estimated 24% of Detroiters use cash rather than checking or savings accounts,²³ and 12% do not have a computing device like a smartphone.²⁴ Moreover, some job seekers were reluctant to use online payment methods due to distrust of the platform, in part because it had no physical presence in the community.²⁵ In the study, the research team argues that uptake of real-time ridesharing services could be more likely to occur when recruiting alongside community organizations.

For individuals who are able to access ridesharing services, some people benefit from rich social interactions with drivers and build forms of social capital, including access to information that could be instrumental in the job search process.

A deeper investigation into the experiences of ridesharing passengers found they often gained informational resources, such as general job leads or details on how to become a driver.²⁶ One Uber rider reflected on a positive experience he had with a driver: “...She was also a young entrepreneur trying to start up her own business and everything. We got contact information, exchanged contact information and everything. So I had a pretty good experience using Uber. Met nice good people.”²⁷

PROMISE AND PERILS OF MASSIVE OPEN ONLINE COURSES TO PROVIDE EMPLOYMENT SKILLS AND SUPPORT EMPLOYABILITY:

Massive Open Online Courses (MOOCs) connect learners all over the world to low- or no-cost education and provide a flexible way to learn new skills and thus gain employment. In particular, MOOCs offer low-income, unemployed, and less educated learners an alternative to the high-cost model of post-secondary education that too often limits upward mobility.²⁸ The research team sought to understand to what extent MOOC platforms support employment among users who faced financial constraints to traditional education. In interviews with 22 learners from across the country, researchers heard mixed responses on whether MOOCs could increase chances of employment. Some viewed the courses as a means to develop new knowledge and skills, while others were pessimistic about the value of a course that did not provide an accredited credential.²⁹ None of the learners said the MOOCs actually helped them shift to a new job, but among those who were already employed, many said MOOCs provided tangible benefits.³⁰ Two learners noted that MOOCs could better support employment if they included improved networking features. “I think that’s the biggest thing that’s missing from the online experience is the opportunity to sit down and maybe work on projects together,” said one user.³¹

Further, **although MOOCs have been touted as platforms to support learners who cannot afford a formal education, very few learners represent this population.**³² In an analysis of over 42,000 students who took MOOC courses, just 9% said they were not able to afford a formal education, while 37% of students already had bachelor’s degrees.³³ Other studies show a significant proportion of individuals who take MOOCs are already employed, and they pursue courses to hone skills at work.³⁴

PROMISES AND PERILS OF THE GIG ECONOMY:

The online on-demand job market, defined as the gig economy, attracts job seekers due to flexible hours, low cost to entry, and the need for little training.³⁵ TaskRabbit, Lyft, Uber, and Doordash are just a few of the popular applications that individuals use to participate in the gig economy. In addition to income generation, gig economy jobs offer workers the potential to build job experience, which may be particularly important for job seekers with employment gaps.

A recent correspondence audit study sought to understand whether low-skilled job seekers with employment gaps would benefit from gig work and how employers evaluate workers who have held non-traditional jobs.³⁶ Using the job search platform Indeed, they assessed whether the résumés of job seekers without a college degree, but with experience driving for a ridesharing service, received more callbacks than résumés with an employment gap. **The authors found no evidence that applicants with experience driving for a ridesharing service had higher callback rates than applicants with gaps on their résumés,** which suggests that driving “gigs” might not be a substitute for

traditional employment on résumés. In fact, they found some evidence that callback rates for women with “gig-enhanced” résumés, compared to men, were slightly lower than résumés with employment gaps. Since the study did not engage with employers directly, we don’t know if or why women with gig work on their résumés are treated differently by potential employers, though this is potentially an area for further study.³⁷

DESIGNING TECHNOLOGIES TO SUPPORT EMPLOYMENT: THE JOB SEEKER’S PERSPECTIVE

In the previous section, we explored the ways in which the collaborative economy fails to deliver on the promise of reducing the main barriers to employment for marginalized job seekers. Here, we summarize the insights gained from a series of design exercises aimed to demonstrate how new digital tools can better serve this population. In the study, the research team presented a group (n=11) of mostly African-American job seekers in Detroit with employment-related design concepts and asked them to rank their top three.³⁸

GETTING RÉSUMÉ FEEDBACK:

The most popular concept was Review-Me (Figure 1), an application that would provide job seekers with expert feedback on their résumés. Volunteers would sign up to serve as experts, and provide informative feedback on various elements of a résumé, including whether job seekers’ experiences match the stated job description. To job seekers, Review-Me was valuable because it provided information about how to best portray their past experiences, with the added bonus

FIGURE 1: REVIEW-ME SCREENSHOT

Overall, the skills and experience listed on this resume match the job description specified. ★★★★★ ?

The job seeker’s work experience matches what a line cook needs but the skills are a bit unrelated.



Overall, the skills and experience listed on this resume match the job description specified. ★★★★★ ?

The job seeker’s work experience matches what a line cook needs but the skills are a bit unrelated.

Formatting Issues ★★★★★ ?

Formatting is great!

of built-in grammar corrections. One participant noted that although she has access to a job coach who provides similar services as Review-Me, the application would be very useful for others without the means to access job coaching services.

IDENTIFYING EXISTING SKILLS:

The second most popular prototype was Skills Identifier, described by the design team as follows:

IMAGINE A JOB SEEKER, ANDY, WHO WANTS TO WORK IN A CUSTOMER-SERVICE JOB BUT IS UNSURE HOW HIS PREVIOUS EXPERIENCES ARE RELATED TO CUSTOMER SERVICE. USING SKILLS IDENTIFIER, ANDY WOULD ENTER HIS PREVIOUS JOB AS A CONSTRUCTION WORKER AND SKILLS IDENTIFIER WOULD DETERMINE THAT CUSTOMER SERVICE JOBS AND CONSTRUCTION JOBS BOTH REQUIRE PROBLEM-SOLVING SKILLS AND TEAMWORK SKILLS. ANDY WOULD THEN UPDATE HIS RÉSUMÉ AND COVER LETTER TO HIGHLIGHT HIS SKILLS IN PROBLEM SOLVING AND TEAMWORK.³⁹

Participants valued the application as a tool to enhance their résumés and help transfer relevant experiences from one career to the next. One participant explains her perception of the application:

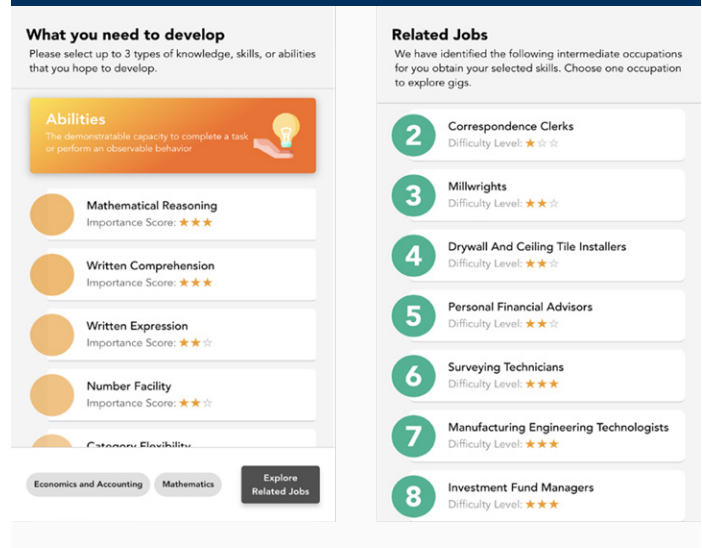
BECAUSE A LOT OF US REALLY DON'T SEE WHAT OTHER PEOPLE SEE. THE SKILL IDENTIFIER WOULD BREAK IT DOWN TO A POINT WHERE YOU COULD SEE HOW ONE JOB ACTUALLY RELATES TO ANOTHER. I LIKE THAT. LIKE YOU MIGHT HAVE GOOD CUSTOMER SERVICE SKILLS. THAT DOESN'T MEAN THAT THAT CAN'T WORK MAYBE IN A LAW OFFICE...⁴⁰

UNCOVERING SKILLS NEEDED FOR LONG-TERM EMPLOYMENT GOALS:

Among job seekers in the study, the third most popular prototype was DreamGigs, which highlights what professional skills are necessary to reach one's ideal job. DreamGigs asks a job seeker to enter her previous jobs, and then tells the job seeker what knowledge, skills, and abilities she needs to develop; identifies intermediate occupations where she could build those skills; and lists relevant positions pulled from job sites, both paid and volunteer (Figure 2). Participants liked that the application provided a clear path to build skills, information that was hard to find online, though some pointed out that local job centers offer a similar service. One job seeker explained:

LIKE, YOU KNOW THERE ARE SOME SITES OUT THERE THAT WILL GIVE YOU INFORMATION ON WHAT YOU SHOULD INCLUDE IN YOUR RÉSUMÉ, THAT SORT OF THING. BUT IF YOU DON'T HAVE THOSE SKILLS, NO ONE TELLS YOU HOW TO GET THOSE SKILLS. IT JUST TELLS YOU WHAT SKILLS YOU NEED TO HAVE, BUT DOESN'T FOLLOW UP ON HOW TO GET THEM.⁴¹

FIGURE 2: SCREENSHOT OF DREAMGIGS PROTOTYPE



To further build on the DreamGigs prototype, Dillahunt and Lu conducted a series of design sprints with 25 social workers and job seekers.⁴² **By sharing information about new paths to the ideal job, DreamGigs motivated job seekers to stay engaged in the search, while expanding the universe of relevant opportunities.** One aspiring business owner said of the DreamGigs platform:

YOU KNOW YOU ALWAYS HEAR PEOPLE COMPLAINING THERE ARE NO JOBS. THERE ARE. IT GIVES ME MOTIVATION. ... IN TERMS OF MOTIVATION TO SEARCH FOR A JOB, OR MOTIVATION TO DEVELOP YOUR SKILLS, OR DEVELOP MY SKILLS, GET MYSELF TOGETHER, KEEP WORKING ON MY GOALS, BECAUSE THEY HAVE DIFFERENT JOBS IN THE AREA AND VOLUNTEER.⁴³

Taken together, these results suggest well-designed technological applications can be deployed to support marginalized job seekers in their pursuit of employment, and contribute to reductions of employment inequality. Given the limitations of the existing collaborative economy to serve marginalized job seekers, stakeholders should collaborate to create new employment tools and enhance existing options to better serve unemployed or underemployed job seekers in low-income communities.

RECOMMENDATIONS

- Invest in innovative new applications or enhance existing ones, based on prototypes such as DreamGigs and Re-view-Me, to help connect job seekers with actionable information on transferrable skills and/or résumé feedback.
- Employment platforms—operated by both public workforce agencies and private companies—could build in designs to encourage users to think about long-term career goals, identify skills gaps, and highlight where to get relevant training to address those gaps. Employment platforms could also incorporate ways for users to see anonymized application materials from users who applied to jobs and were asked to interview, thus enabling job seekers to gain insight into their performance compared to others.⁴⁴
- Employment platforms could enable users to link social media accounts to highlight contacts with specific skills or contacts who could be useful to their job search.
- Invest further in community-based programs that connect marginalized job seekers to life coaches or mentors who can offer information about jobs, assistance with résumés, and interview skills if needed.⁴⁵
- In Detroit and elsewhere, nonprofit practitioners and policymakers should consider enhancing current workforce programs by developing services specifically designed to help job seekers connect with each other and build social networks, in addition to their traditional orientation toward connecting job seekers with job opportunities, training, and social services.
- Installing public kiosks in intermediate locations such as third-party organizations, barbershops, and community businesses through which people could call real-time ride-sharing services would eliminate the need for smartphones while accommodating multiple forms of payment including cash, gift vouchers, and credit/debit cards.
- Conduct further research on why gig work sends negative signals to employers, and through job coaches and job centers, share findings with job seekers.
- To better support employment searches, MOOCs could further support social capital by connecting learners offline. In order to help job seekers identify relevant career paths, platforms could also encourage learners to share their job titles and career paths. Last, MOOC platforms could share data with users about trends in courses taken or certificates earned, thus signaling to a new user what skills may be useful in the employment market.⁴⁶
- Invest in low- to no-cost training programs for reskilling or upskilling that are not solely dependent on reliable internet access.

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