Welfare to Web to Work: Internet Job Searching Among Former Welfare Clients in Florida

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Welfare to Web to Work: Internet Job Searching Among Former Welfare Clients in Florida

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This study provides the first empirical test of whether searching for jobs on the Internet can help people gain access to high quality jobs. Using new data from former welfare clients in Florida, we present results from a multivariate regression analysis of Internet job searching on wages and on a number of job benefits. On average, Internet job searchers receive better jobs than people who conducted more traditional job searches, net of numerous control variables. These findings suggest that welfare recipients have a great deal to gain from searching for their jobs on the Internet.

Keywords: welfare; Internet; computer; job search

The remarkable increase in online recruiting and Internet job searching in the last decade has fundamentally transformed job searching and job allocation (Feldman & Klaas, 2002; Cappelli, 2001; Kuhn & Skuterud, 2000, 2004). The use of the Internet in job searching has the potential to lower unemployment and increase productivity to the economy as a whole (McConnell, Brue, & McPherson, 2002). However, Internet job searching and recruiting could also lead to an increase in labor market inequality, as employers may use the “digital divide” as a filtering technique (Cappelli, 2001). Firms often advertise on the Internet to screen out less desirable workers. Employers tend to view Internet applicants as better educated, more motivated and more resourceful (Niles
& Hanson, 2003). Therefore, employers often use newspapers and print ads to recruit less-skilled employees, while using the Internet to target skilled workers to fill higher-level positions.

By relying solely on traditional job search methods, a job seeker may be limiting her access to low-pay, low-quality jobs. This assertion, however, has yet to be tested empirically, as most researchers simply assume that people can convert Internet access into valued resources (Dimaggio, Hargittai, Neuman, & Robinson, 2001). Only recently have researchers begun to examine the relative effectiveness of Internet job searching, although these investigations have focused on unemployment duration rather than on job quality (Kuhn & Skuterud, 2004; Fountain, 2005).

The potential for employment benefits from Internet job searching is greatest among vulnerable populations. Research on welfare recipients has focused on job matching processes and outcomes for former welfare clients (Lindhorst, Mancoske, & Kemp, 2000; Vartanian & McNamara, 2000; Anderson, Halter, Julnes, & Schuldit 2000) and on the importance of the direct intervention of welfare program managers to help clients find jobs (Livermore & Neustron, 2003; Wilson, Stoker, & McGrath, 1999). However, few have considered the Internet as a viable option for matching welfare clients to jobs. Internet job searching among former welfare recipients is comparable to Internet searching among unemployed workers in the general population (Crew and Lamothe, 2003; Kuhn & Skuterud, 2000, 2004). By tapping into the opportunities online, welfare recipients may be able to use the Internet as a bridge to stable, high quality employment.

Data and Sampling

Drawing from telephone survey data and administrative records on former welfare recipients in Florida, we provide the first empirical test of the extent to which Internet job searching results in the receipt of better jobs than traditional search methods. The sample was randomly selected from a list (provided by Florida’s Department of Children and Families) of people who had been on welfare but did not receive a Temporary Aid to Needy Families (TANF) check for two consecutive months at some point between
January and September of 2001. The sample consisted mostly of
women (about 90 percent).

Florida State University’s Survey Research Laboratory (SRL)
conducted the interviews between April and July of 2003. Among
eligible respondents that the SRL was able to contact, almost half
completed the survey (cooperation rate COOP1 = 48%, AAPOR,
2004). However, contacting eligible respondents is extremely dif-
ficult given the population’s mobility and susceptibility to inter-
ruptions in telephone service. As a result, many of the phone
numbers were no longer working or were wrong numbers. The
SRL made numerous attempts and called additional phone num-
bers for non-respondents (found through prior administrative
data and an electronic telephone directory program) in order to
increase the response rate. In the end, 845 respondents (out of
5,000 potential respondents) completed the survey (raw response
rate RR1=17%, AAPOR, 2004). This response rate, though low, is
quite similar to response rates for telephone surveys of similar
populations (e.g., RR1=25% for Lindhorst et al., 2000).

Welfare populations are notoriously difficult to track, which
introduces the potential for non-response bias. Non-response bias
can occur when the characteristics of respondents systematically
differ from the overall sample and when these differences con-
tribute to biased estimations. Researchers of low income and wel-
fare populations have used a variety of techniques to address the
potential for non-response bias in their samples (e.g. Michalopou-
los, Card, Gennetian, Harknett, & Robins, 2000; Groves & Wis-
soker, 1999; Kauff, Olsen, & Fraker, 2002; Crew, Eyerman, Gra-
ham, & McMillan, 2000). None of this research shows a significant
response bias. Several independent sample t-tests were run to de-
termine the extent to which the demographic characteristics of the
people who completed the survey differ from the characteristics
of people from the overall sample. The small differences do not
appear to reflect a systematic pattern of non-response bias. Based
on these results, we feel confident that our data present a fairly
accurate picture of the activities of individuals who left Florida’s
TANF program in 2001.

These survey data on former welfare recipients are unique
because they contain a module on respondents’ Internet search
activities that was adapted from questions asked in the December
1998 Current Population Survey Computer and Internet Use Supplement. These questions were only asked of respondents who had found a job since leaving welfare, or about 70 percent of all respondents. Consequently, the respondents who were unable to find work since leaving welfare are excluded from the analysis. To correct for potential selection bias due to this exclusion, a Heckman selection procedure was run to obtain the inverse Mill's ratio (Breen, 1996), which was used as an independent variable in all of the multivariate analyses.

**Findings**

Twenty percent of respondents reported that they had used the Internet to search for their current (if employed) or most recent (if unemployed) job. Respondents were also asked about the kinds of Internet job search activities that they engaged in and where the searches were conducted. Three out of four read online job ads or searched online job listings, by far the most popular Internet search strategy. Respondents also submitted resumes and applications (28%), researched information about employers (23%), and posted resumes on job listing sites (12%). Close to 60 percent of the former welfare recipients who conducted Internet job searches did so at home. Other places (such as community centers, public libraries, employment agencies, someone else's computer, school) were used much less frequently and very few reported using the Internet at the TANF office or at work. Most respondents cited either the lack of access to a computer and/or the Internet (44%) as the main reason for not using the Internet to search for jobs or they explained that they did not need to use the Internet because they were able to find a job some other way (24%). The final Internet questions reveal that 43 percent of former welfare clients have access to a computer and 36 percent have access to the Internet in their households.

Logistic regression analysis was used to identify the factors associated with Internet job searching (see Table 1). The results indicate that there are few differences between welfare recipients who searched for their jobs on the Internet and those who did not. Gender, race, region, and number of children in the household are not significantly related to the odds of Internet job searching.
Table 1

*Odds Ratios for Binary Logistic Regression on the Likelihood of Internet Job Search*

<table>
<thead>
<tr>
<th>Internet job search</th>
<th>Model 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>.311</td>
</tr>
<tr>
<td>[Male]</td>
<td>1.000</td>
</tr>
<tr>
<td>Black</td>
<td>1.585</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.435 *</td>
</tr>
<tr>
<td>[White]</td>
<td>.723</td>
</tr>
<tr>
<td>Married</td>
<td>1.439</td>
</tr>
<tr>
<td>[Unmarried]</td>
<td>.790</td>
</tr>
<tr>
<td>Number of children living in household</td>
<td>1.146</td>
</tr>
<tr>
<td>Female*number of children</td>
<td>.723</td>
</tr>
<tr>
<td>North Florida</td>
<td>1.501</td>
</tr>
<tr>
<td>Central Florida</td>
<td>.982</td>
</tr>
<tr>
<td>[South Florida]</td>
<td>.709</td>
</tr>
<tr>
<td>Age</td>
<td>.930 **</td>
</tr>
<tr>
<td>Excellent health</td>
<td>1.226</td>
</tr>
<tr>
<td>Fair/poor health</td>
<td>1.050</td>
</tr>
<tr>
<td>[Good health]</td>
<td>1.501</td>
</tr>
<tr>
<td>High school graduate</td>
<td>.982</td>
</tr>
<tr>
<td>Post high school graduate</td>
<td>.709</td>
</tr>
<tr>
<td>[Less than high school]</td>
<td>.930 **</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.109</td>
</tr>
<tr>
<td>[Employed]</td>
<td>.731 **</td>
</tr>
<tr>
<td>Number of jobs since leaving welfare</td>
<td>.943</td>
</tr>
<tr>
<td>Length of most recent unemployment gap</td>
<td>.943</td>
</tr>
<tr>
<td>Drives to work</td>
<td>1.080</td>
</tr>
<tr>
<td>[Does not drive to work]</td>
<td>1.197 *</td>
</tr>
<tr>
<td>Hardship</td>
<td>.257 **</td>
</tr>
<tr>
<td>Government assistance</td>
<td>2.364 *</td>
</tr>
<tr>
<td>Offline job search intensity</td>
<td>5.993 **</td>
</tr>
<tr>
<td>Computer in home</td>
<td>10.285 *</td>
</tr>
<tr>
<td>Internet access at home</td>
<td>538</td>
</tr>
<tr>
<td>Inverse Mill's ratio</td>
<td>.166</td>
</tr>
</tbody>
</table>

**p < .01, *p < .05, *p < .06; two-tailed test

The reference categories for the dummy variables are bracketed.
However, the unmarried are more likely to have conducted Internet searches than the married. And younger people are more likely to have searched on the Internet for their jobs, which is consistent with prior evidence (Bimber, 2000; Strober & Straubhaar, 2000).

Surprisingly, there are also few differences in the kinds of skills and resources of Internet versus traditional job searchers. Health is essentially unrelated to the chances of Internet job searching. Education is not significantly related to Internet job searching, which runs counter to other research noting a positive relationship between education and Internet use (Bimber, 2000; Strober & Straubhaar, 2000). People with high school degrees are more likely than people without high school degrees to have searched for their jobs on the Internet, though the relationship is not statistically significant. People with degrees beyond high school have roughly the same odds of conducting an Internet search as people without a high school degree. Current employment status and the number of jobs that a person has had since leaving welfare are unrelated to the odds of Internet searching. People with longer unemployment spells were, however, less likely to have searched for their jobs on the Internet.

We also included in the model several additional measures designed to assess differences in material resources. For example, we include a measure of whether or not a person drives their own car to work (versus using public transit or other forms of transportation), which serves as a proxy measure for owning a car. However, this variable is unrelated to Internet searching. We also constructed a hardship index—a count of negative life events that people may have experienced since leaving the welfare program (e.g., Has the electricity in your home ever been cut off?). The index ranges from 0–12 and has an alpha reliability score of .66. Again, this variable is unrelated to Internet job searching. In similar fashion, we constructed an index of the number of different forms of government assistance that people receive (i.e., Food Stamps, Medicaid, SSI). The variable ranges from 0–8 and has an alpha of .53. People who receive greater government assistance are significantly more likely to have conducted an Internet search.

Several other factors are associated with the likelihood of
Internet job searching. The number of offline (non-Internet) job search methods used is inversely related to Internet searching. In other words, the Internet job searchers did relatively little job searching offline. Offline job searching consists of getting a job through a personal contact (friend, relative, or acquaintance), through formal job search methods (through want ads or through an employment matching service), or by applying directly for the position. Access to computers and the Internet in the home are the most powerful predictors of Internet job search among welfare recipients. People with access to both computers and the Internet at home are almost 6 times more likely than people without computers to have searched the Internet for their jobs. Interestingly, people with computers but without Internet access at home are more than twice as likely to have searched for their jobs on the Internet as people without computers in their homes. This suggests that familiarity with computer technology is an important determinant of Internet job searching, as people without Internet access in the home are more likely to conduct an Internet job search if they have a computer in the home.

It is important to note that the inverse Mill's ratio is positively associated with the likelihood of Internet job searching. This shows that the characteristics of people who did not find work since leaving welfare are significantly different from the characteristics of people who searched for their jobs on the Internet. Based on this, we would expect that the people who did not find employment after leaving welfare were less likely to have conducted Internet job searches. On the whole, then, Internet searchers appear to have somewhat greater skills and resources than respondents who did not search for their jobs on the Internet. The greatest difference, though, is access to the Internet.

Finally, we assess the extent to which Internet job searching is consequential for job outcomes. For this set of analyses, several job quality indicators are used as dependent variables. We ran weighted least squares regression models on the log of hourly wages plus logistic regression models on the likelihood that the job is full time or offers pension benefits, health care for the respondent and for their children, and training opportunities. In the regression models, we include most of the variables listed in Table 1 in order to control for personal characteristics, skills and
resources that might moderate the relationship between Internet job searching and job quality (see Table 2 for details).

While a direct measure of job-related skills is not available in the dataset, we used information on occupation to construct a "job zone" variable which measures vocational preparation—the amount of experience, education, and training that would be necessary to perform the job (O*NET Consortium Database, 2005; Hadden, Kravets, & Muntaner, 2004). Job zone values range from one (little or no preparation needed) to five (extensive preparation needed). The job zone variable is positively associated with both Internet searching and with each of the employment outcomes, suggesting that (1) the Internet searchers have greater job-related skills than people who do not search on the Internet and that (2) highly skilled jobs are more likely to be advertised on the Internet. By controlling for job zones, we assess the relationship between Internet searching and job quality net of the skill requirements of the job.

The results of the regression analyses are summarized in Table 2. Internet searching is positively associated with all six of the job quality indicators (see Model set A), though the relationship is statistically significant for only half of these dependent variables. People who searched for their jobs on the Internet are significantly more likely than people who did not search online to have received a job with pension benefits, health care for their children, and training opportunities. Post-hoc analyses (not shown) reveal a significant interaction between gender and Internet searching for the wages model, such that, among women, Internet job searchers receive significantly higher wages than women who did not search for their jobs on the Internet. Offline job seeking is not nearly as successful as Internet searching. None of the offline search methods (personal contact use, formal job seeking, or direct application) is significantly associated with a positive job outcome. In fact, these offline methods are more often negatively associated with the job quality measures.

We also investigated the role of job search intensity (see Model set B). The intensity measures reflect a count of the different search activities that the respondent engaged in. Internet searching includes the following four possibilities: (1) reading online...
### Table 2

**Summary of Regressions of Internet Job Search on Job Outcomes**

<table>
<thead>
<tr>
<th></th>
<th>Full time</th>
<th></th>
<th>Log of hourly wages</th>
<th></th>
<th>Pension</th>
<th></th>
<th>Health care</th>
<th></th>
<th>Health care for children</th>
<th></th>
<th>Training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model set A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet search</td>
<td>1.295</td>
<td>.041</td>
<td>(.033)</td>
<td>2.382 **</td>
<td>1.346</td>
<td>1.780 †</td>
<td>2.101 *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offline search</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal contacts</td>
<td>1.139</td>
<td>−.081</td>
<td>(.068)</td>
<td>.518</td>
<td>1.279</td>
<td>1.287</td>
<td>.536</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>1.484</td>
<td>−.023</td>
<td>(.067)</td>
<td>.686</td>
<td>1.050</td>
<td>.914</td>
<td>.589</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct application</td>
<td>.768</td>
<td>−.127 †</td>
<td>(.065)</td>
<td>.886</td>
<td>1.164</td>
<td>1.435</td>
<td>.406</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-square</td>
<td>.084</td>
<td>.169</td>
<td>.141</td>
<td>.126</td>
<td>.167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pseudo R-square</td>
<td>.169</td>
<td>.141</td>
<td>.126</td>
<td>.167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2  Continued

Summary of Regressions of Internet Job Search on Job Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Full time</th>
<th>Log of hourly wages</th>
<th>Pension</th>
<th>Health care</th>
<th>Health care for children</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet search intensity</td>
<td>1.255</td>
<td>.044 *</td>
<td>1.977 **</td>
<td>1.449 *</td>
<td>1.539 **</td>
<td>1.384 †</td>
</tr>
<tr>
<td>Offline search intensity</td>
<td>1.086</td>
<td>−.072</td>
<td>.712</td>
<td>1.212</td>
<td>1.189</td>
<td>.459</td>
</tr>
<tr>
<td>R-square</td>
<td>.075</td>
<td></td>
<td>.180</td>
<td>.148</td>
<td>.131</td>
<td>.160</td>
</tr>
<tr>
<td>N</td>
<td>529</td>
<td>455</td>
<td>513</td>
<td>525</td>
<td>521</td>
<td>520</td>
</tr>
</tbody>
</table>

**p < .01, *p < .05, † p < .06; two-tailed test

All models control for gender, race, marital status, number of children, female*number of children, region, age, health, education, employment status, number of jobs since leaving welfare, length of most recent employment spell, drives to work, hardship, government assistance, full time job status, required vocational preparation for each occupation, and the inverse Mill’s ratio.
job ads or searching online job listings, (2) submitting a resume or application to an employer online, (3) researching information about potential employers, and (4) posting a resume on a job listing site or with a service online. As mentioned above, offline searching consists of using personal contacts, formal search, and direct application. The regression results reveal that intensity of Internet search is positively and significantly associated with all the job quality indicators except for full time employment. In other words, each additional Internet job search strategy is associated with an increase in the likelihood of receiving most job benefits. Each additional strategy is also associated with about a 4.5 percent increase in hourly wages (calculated as 100*[exp(B) - 1]; see Hardy, 1993, pp. 56-60). Offline search intensity, on the other hand, is essentially unrelated to job quality.

Discussion

Some of the best jobs are advertised on the Internet. Employers often rely on the Internet to fill skilled positions rather than unskilled positions, using the digital divide as a sorting mechanism to identify qualified candidates (Niles & Hanson, 2003). As a result, former welfare recipients who search for their jobs on the Internet tend to receive better jobs on average than those who rely on traditional job search methods. Indeed, the welfare recipients who used the Internet had greater skills, but the advantages to Internet searching remain even after controlling for the skill requirements of the job.

Of course, searching on the Internet does not guarantee that the searchers will be hired for the jobs. But by searching for jobs on the Internet, welfare clients can expand their knowledge of potential openings, increasing their likelihood of landing a good job. Internet searching also signals to employers that workers have desirable skills and characteristics. When making hiring decisions, employers often look for signals that may be indicative of workers' productive capacity (Bills, 2003). A recent study demonstrates that simply listing an e-mail address in a resume significantly increases the chances of a receiving a call back from the employer (Bertrand & Mullainathan, 2003). By responding to an online position announcement, workers project a sense
that they are young, educated, web-savvy, and computer literate, regardless of whether or not that is actually the case.

Prior research examining job matching processes and outcomes of former welfare recipients has often focused on the role of case workers in helping clients find their jobs (e.g., Livermore & Neustron, 2003; Wilson et al., 1999). But welfare recipients rarely rely on their case workers to find them jobs (Crew and Lamothe, 2003; Crew, McDonald, and Johnson, 2000). Most low income people find employment in much the same way as do people in the "regular" workforce... on their own (Rankin, 2003). Internet searching is a particularly effective way that low income people find jobs. Therefore, policy makers should implement programs that promote Internet job searching among welfare clients. Internet job searching should not replace traditional search methods, but supplement these methods for the 80 percent of former welfare clients who do not search the Internet. The results demonstrate that the greatest impediment to searching for a job on the Internet is access. Welfare offices should offer sufficient Internet access for their clients to allow them to search for their jobs. In addition to providing access, welfare offices should also provide training on how to search the Internet for jobs. Internet search intensity is positively related to job outcomes, suggesting that people who conduct more thorough Internet searches are more likely to receive better jobs. Welfare clients could be taught different search strategies (e.g., conducting research on employers, submitting a resume directly to a company, etc.) and they could be pointed in the right direction for where to look for jobs on the Internet.

In Florida, welfare offices generally provide Internet access for their clients, but lack formal training or classes on computer or Internet use (Hall, 2005). Informal help is sometimes provided, but the extent to which this occurs varies widely across the state. On the national scene, the federal government provides funding opportunities for the states to facilitate the creation of one-stop career centers. These centers generally provide access to the Internet and other resources that offer labor market information (Sampson, Reardon, Kolodinsky, & Herbert, 1998; Sampson & Reardon, 1998). However, access to this information alone is unlikely to be effective by itself (Sampson & Reardon, 1998). These centers
generally lack formal guides for using these resources and instead emphasize self service. More importantly, one-stop centers have suffered from a lack of coordination with TANF work programs and the kinds of services and resources offered vary substantially across localities (Nilsen, 2002).

By empirically establishing the link between Internet searching and job quality, this study provides an important starting point for future research. First, researchers should explore whether or not the labor market advantages of Internet searching extend beyond low income populations. Second, future investigations should test the robustness of these findings by employing better measures of workers' skills and resources or analyzing longitudinal data in order to control for unmeasured characteristics in a fixed effects framework (see Kuhn & Skuterud, 2004). Third, recent analyses suggest that the payoffs to Internet searching may diminish over time (Fountain, 2005). As such, researchers should examine trends in the effectiveness of Internet searching over time. By further investigating the role of the Internet in job allocation processes, we can enhance our understanding of labor market stratification, barriers to achievement, and the ways that people can use technology to overcome these barriers.

References


Welfare to Web to Work
