

Tight Labor Markets and Extensive Job Searches:  
How changes in the unemployment rate affect job search behaviors

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**Abstract**

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Professor Katherine Stovel  
Sociology

Understanding the ways people look for jobs is an important part of understanding employment outcomes. This paper examines various factors that contribute to the decision to search for a new or different job and the extensiveness of resulting job searches. I pay particular attention to the effect of unemployment rates on searching, contending that because the unemployment rate is a measure of demand for labor, it should also alter job search behaviors. As the shape of the labor market changes, the chance of a worker being matched to an employer also changes: a higher unemployment rate makes it more difficult to find a job while a lower unemployment rate favors job searchers. Workers should respond to these shifts by altering their job search behaviors to increase the likelihood of being matched to an employer. By using more job search methods, workers exploit more sources of information about potential job openings. Thus, when unemployment rate is high, job searchers should use more extensive searches. Using data from the NLSY97, I show that the job search behaviors of young workers are sensitive to shifts in the unemployment rate. Young workers' job search behaviors change with fluctuations in the unemployment rate in both predictable and surprising ways.

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## **Introduction**

Employment is an essential part of life for the majority of American adults; jobs not only provide a source of livelihood and financial stability, but they also contribute to a sense of self, shape social interactions and organize daily life. How workers are sorted into jobs is a two-sided process that depends on both employer preferences and information about available workers, and worker preferences and information about open positions (Coleman 1991; Stovel and Fountain 2003). Active job search is a way for individuals to gather information about potential job openings as well as disseminate information about themselves as workers. Because active job search contributes to the decision of what jobs workers apply to, and thus what jobs workers might obtain, it is an important sorting mechanism. Job search contributes to the sorting of workers into different types of jobs, therefore impacting both career and life trajectories.

Understanding what factors impact both the propensity to job search and the ways job searches are conducted helps us understand how this sorting mechanism works, thereby informing how we understand other employment outcomes, like racial or gender segregation in the workplace or underemployment among recent college graduates. Job search studies also contribute to our understandings of how social, human and cultural capital can operate in a cumulative fashion as these factors affect both how searches are conducted and what jobs workers are able to obtain (Fernandez and Sosa 2005; Green, Tigges, and Diaz 1999; Hanson and Pratt 1991).

Most research on job search has focused either on what types of searches increase the probability of obtaining job interviews, job offers and eventual employment, or the personal and social characteristics associated with particular search strategies. In this paper, I add to our understanding of job search by examining how an important contextual factor, the unemployment rate, affects job searching. I contend that employed and not-working individuals

may respond to external changes in the labor market by changing if and how they look for jobs. Tight labor markets, as marked by high unemployment rates, are characterized by increased competition for fewer vacancies. In particular, the local unemployment rate changes the opportunity structure of the labor market in which an active job searcher is looking for work and is thus an indicator of the difficulty of finding a job. Active job seekers should respond to these changes by adjusting how they look for work to increase the likelihood they will be matched with a job. One way to increase the probability of an employment match is to increase the breadth of search to find new information. Extensive searches are critical in tight labor markets as they make use of multiple sources of job information thereby increasing the likelihood of discovering more job opportunities. Although prior research has shown that social characteristics play an important role in determining what search methods individuals use, we should expect that all searchers will increase the extensiveness of their search during times of high unemployment to improve their prospects. This research makes an important contribution to the literature on job searches because it explores the link between an indicator of the number of job opportunities available, the unemployment rate, and workers' actual search behaviors.

My specific focus is on the job search behavior of young adults. Young adults are in a unique position both in their lives and their careers. It has been well-established that in the US, jobs in the first decade of work are important for establishing both life- and career- trajectories (Keith and McWilliams 1999; Oppenheimer 2003; Super 1980; Topel and Ward 1992). Young workers are also unique in that they change jobs more frequently (Parsons 1991; Topel and Ward 1992) and use formal methods more frequently in their searches (Mau and Kopischke 2001; McDonald 2005; Try 2005). Using data from the National Longitudinal Surveys of Youth from 1999-2007, I examine the effect of the both the local and national unemployment rate on

employed and non-working individuals' probability of initiating a job search, and the breadth of their search activities. Results reveal that young adults do respond to external labor market changes by adjusting their search behaviors in both predictable and surprising ways. During tight labor markets, young job searchers use more extensive searches, but it is the national, not the local unemployment rate that drives these changes.

## **Background**

### *Labor Markets*

One common way of understanding the labor market is the idea that it operates by matching the preferences of job seekers to preferences of prospective employers (Coleman 1991; Reskin and Roos 1990; Thurow 1969). In this framework, employers rank workers into a labor queue based on their skills, education and other desirable attributes, while workers rank jobs based on wages, benefits and other attractive features in a job queue (Reskin and Roos 1990; Thurow 1969). The most prized workers are rewarded with the highest quality jobs, while undesired workers are left to compete for whatever positions remain (Reskin and Roos 1990; Thurow 1969). Both workers and employers face constrained choices and must select from the available options to find a counterpart willing to accept their offer. In this way, finding a job is not only contingent on the characteristics of each job seeker or job in isolation, but also on those characteristics in comparison to others (Coleman 1991; Reskin and Roos 1990).

The shape of a labor queue is characterized by the absolute and relative numbers of available positions and workers; the shape of the labor queue determines the probability of a worker getting a job (Reskin and Roos 1990). When the number of available workers is large relative to the number of open positions, employers can afford to be more selective and choose only the most desirable candidates. However, when labor is at a premium, these same positions will be

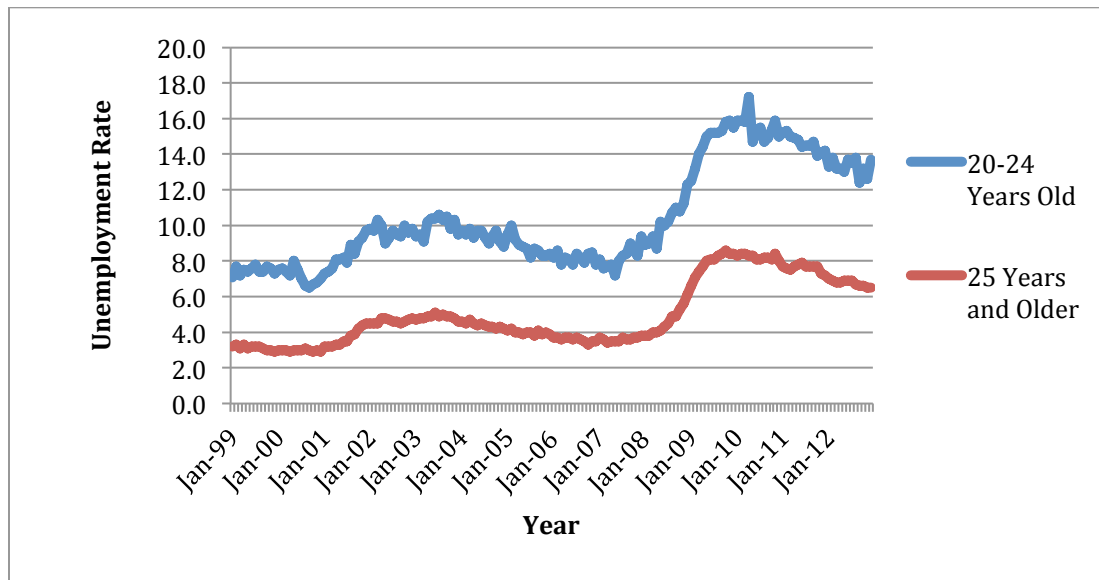
offered to less desirable workers. Thus when there are few job opportunities and a surplus of available workers, low-ranked groups of workers are pushed further down or even out of the labor market (Reskin and Roos 1990). When there is high demand for labor, job seekers may have the upper hand while in times of low demand, employers benefit from increased competition among workers (Fevre 1989; Reskin and Roos 1990).

Classical economic theory asserts that employers prefer to hire workers with appropriate levels of skill, experience and credentials, and workers prefer to take jobs with high wages and prestige (Coleman 1991; Spence 1974; Thurow 1969). Employers rely on signals of productivity, like prior work experience and education, to rank potential workers (Spence 1974). Because of their relative lack of work experience, young workers typically rank low in the labor queue. Without clear evidence of experience, young workers may be passed over for available jobs for workers with more experience and therefore pushed down and even out of the labor queue. This logic helps understand the systematically higher unemployment rates among young workers; as shown in Figure 1<sup>1</sup>, the unemployment rate for workers aged 20-24 is considerably higher than the unemployment rate for workers over 25. Furthermore, this difference between age groups is exacerbated during tight labor markets: while the difference between the unemployment rate for young workers and mature workers was 3.9% in January 1999 when the unemployment rate for workers between 20-24 was 7.5% and the unemployment rate for workers over 25 was 3.3%, the gap between increased to 7.6% in January 2010, when the unemployment rate for younger workers was 15.9% and the unemployment rate for older workers was 8.3%. These statistics show that although all workers face higher competition for jobs during tight labor markets, young workers are especially vulnerable to shifts in the economy.

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<sup>1</sup> Unemployment rates are national and seasonally adjusted. Unemployment rates by age obtained from the Bureau of Labor Statistics Current Population Survey database. <http://www.bls.gov/data/#unemployment>

Figure 1: Unemployment Rate by Age: 1999-2012



In addition to labor market experience and education, employers also use personal attributes including race, gender and family status, and especially the intersection of these attributes, to predict performance and make hiring decisions (Budig and England 2001; Reskin 1993; Thurow 1969). For instance, research has shown that employers interpret marriage and fatherhood as a sign of productivity and stability for men, while motherhood is interpreted as a signal that a woman is less committed to paid work and will be less productive (Budig and England 2001; Correll, Benard, and Paik 2007). In general, whites and men are hired, promoted and paid at higher rates than non-whites and women (Maume, David J. 1999). Workers with low levels of education and skills, non-white and female workers are often towards the bottom of the labor market and face more difficulties in finding steady employment than their high skilled, white, male counterparts.

Changes in the shape of labor and job queues change the probability of successful employment-worker pairings. By definition, times of slow economic growth or economic

contraction limit the number of opportunities available to job seekers. During times of high unemployment workers experience a tight labor market where opportunities are scarce and competition high. Tight labor markets push less desired workers further down the labor queue as the few available jobs are awarded to more qualified or desired workers—even if these workers are over qualified for the open position. Workers with lower levels of education, fewer skills and less experience in the labor market may be increasingly looked over during tight labor markets and become underemployed in terms of hours and wages or may be pushed out of the labor market altogether (Hout, Levanon, and Cumberworth 2011; Reskin and Roos 1990).

Furthermore, workers with few connections to those with hiring power may also see their chance at employment diminish during times of high competition (Fevre 1989). High unemployment rates lead to an overall downward shift in the labor queue as all workers accept whatever jobs are available, regardless of their preferences and even qualifications.

Implicit in the labor queue theory is the idea that a labor market has boundaries that workers can be pushed out of and pulled into depending on the shape and tightness of the market. One type of boundary is an occupational or industry boundary (Kalleberg and Sorensen 1979; Kerr 1950). For instance, the teacher labor market is an occupational labor market bounded by a specific set of credentials and skills while the health care industry encompasses a range of occupations tied to a certain area of interest.

Labor markets also have geographical boundaries (Fernandez and Su 2004) that are determined by workers' ability and willingness to relocate for a job (Kerr 1950), employers' recruitment strategies and other information flows that affect which job seekers hear about which job opportunities (Fernandez and Su 2004). If workers were completely mobile and job information completely costless and available, workers would participate in a national labor

market. However, labor markets tend to be local rather than national (Fernandez and Su 2004). A local labor market is typically defined as the area within commuting distance between the workers' home and workplace (Fernandez and Su 2004). For many workers, especially those low in the labor queue, space acts as a constraining factor (Fernandez and Su 2004). High-skill workers are more likely to compete in a national labor market than low-skill workers, while women are most likely to look for jobs close to home (Hanson and Pratt 1991; Huffman and Cohen 2004).

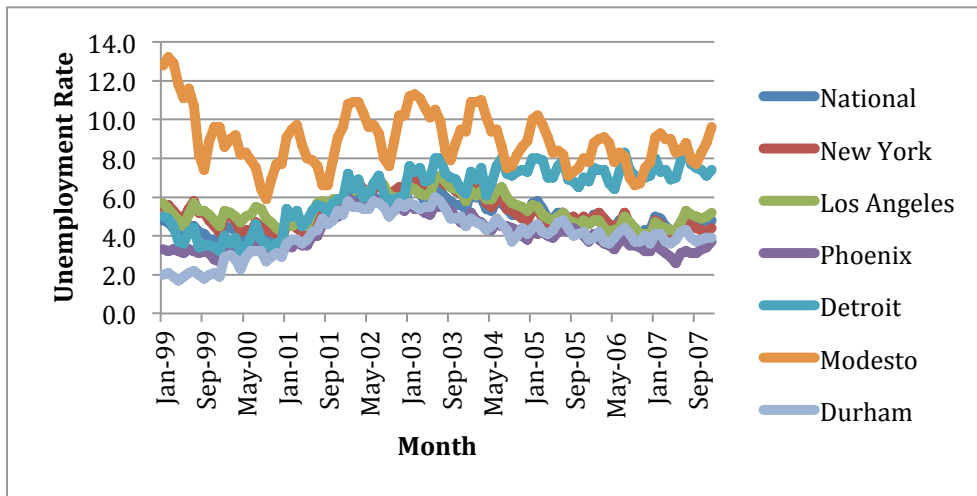
Changes in the local unemployment rate directly impact the opportunity structure of the local labor market by changing the rate of vacancies and therefore the rate at which a job seeker would be offered a job (Haurin and Sridhar 2003). Local labor markets are more volatile than the national labor market as they vary with the local unemployment rate, which fluctuates more than the national unemployment rate. Local areas experience higher highs, lower lows and more change over time. Figure 2 shows the national unemployment rate and the unemployment rate for select metropolitan areas between 1999-2007 (the duration of this study)<sup>2</sup>. During this time, the national unemployment rate ranged from a low of 3.7% in December 1999 to a high of 6.5% in January of 2003, a range of less than three percent<sup>3</sup>. In contrast, over the same nine year period, the unemployment rate in the Modesto, California metropolitan area ranged between 5.9% and 13.2%, a 7.3% difference, while the unemployment rate in the Durham, North Carolina metropolitan area ranged between 1.7% and 6.0%, a 4.3% difference.

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<sup>2</sup> All unemployment rates were obtained from the Bureau of Labor Statistics Local Area Unemployment Statistics database (<http://www.bls.gov/lau/data.htm>). The unemployment rates used to make this figure are all not-seasonally adjusted. While the BLS reports the seasonally-adjusted national unemployment rate, it does not report the seasonally-adjusted unemployment rate for all MSA's. For consistency, I only used the unadjusted unemployment rates.

<sup>3</sup> Of course, the national unemployment rate varied more during the Great Recession peaking at 10.0% in October of 2008. However, local unemployment rates still varied more during the Great Recession than the national unemployment rate.

Figure 2: Local and National Unemployment Rates: 1999-2007



Prior empirical work documents some of the ways in which tight labor markets lead to suboptimal worker-employer matches and disadvantage workers at the bottom of the labor queue. In a study of Canadian male college graduates, Oreopoulos, von Wachter and Heisz (2006) found that those who graduated during a recessionary period had wages nine percent lower than their predicted earnings. They attribute these lower wages to workers taking jobs at smaller, lower paying firms because they cannot compete for better jobs. Although the reduction in earnings did eventually fade for the majority of workers, it took 8-10 years to adjust from this initial setback. However, not all workers recovered from their initial underemployment: those in the bottom quintile of predicted wages never recovered to earn their predicted wages. These workers were permanently lowered on the labor queue simply because they graduated during a recessionary period. These findings show that the unemployment rate changes the shape of the labor market in a way that pushes certain groups of workers down in the labor queue. This downgrade, even if temporary, has significant impacts on current income, future earnings and lifetime earnings (Oreopoulos, Von Wachter, and Heisz 2006).

## *Job Search*

Regardless of the economic climate, in order to be matched with a job, a worker must search for an open position or be recruited for one. Although passive searches, or non-search, leads to job opportunities for some workers (Granovetter 1973; McDonald 2005), many job seekers actively search for a new position by preparing resumes, reading classified ads, sending out applications, asking for help from friends and family members, preparing for and attending interviews and following up on job leads (Kanfer, Wanberg, and Kantrowitz 2001). An active job search is a purposeful endeavor with the end goal of employment and can be a costly in terms of time, direct and psychic costs (Kanfer, Wanberg and Kantrowitz 2001). Not surprisingly, the more effort a job seeker exerts, the more costly the search (Holzer 1989) but the more likely the search is to end in a job interview and offer of employment (Saks 2006).

Job searches, as with any type of search in a market, can be characterized in terms how *extensive* and *intensive* they are (Geertz 1978). Extensiveness refers to the breadth of information sought from different sources, while intensiveness refers to the pursuit of additional information about specific opportunities (Geertz 1978; Rees 1966). Extensive searches are wide in the sense that they offer searchers a chance to “test the waters” by gathering information about a variety of opportunities, while intensive searches are deep in that searchers try to get as much information about a few opportunities (Geertz 1978; Rees 1966). In the context of job search, search extensity refers to exploring a number of potential job leads while search intensity refers to learning everything possible about a specific vacancy<sup>4</sup>. In general, intensiveness is measured by

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<sup>4</sup> The distinction between intensive and extensive search has also been applied to employers looking to fill vacancies. Intensive employer searches are measured by time spent per applicant recruiting, reviewing applications and interviewing before an offer of employment. Extensive employer searches are measured by the proportion of applicants reviewed and/or interviewed over the number of employment offers issued.

time spent engaged in job search behaviors (Saks 2006) while extensiveness is measured by number of job sources used (Holzer 1987).

In this paper, I focus on the extensiveness of search because this measure captures the variety of information sources job seekers use. Job seekers who use multiple methods to find out about potential jobs are engaging in an extensive search, since they rely on more and different sources to find job leads (Holzer 1987). Presumably, when there are few jobs relative to the number of job seekers, reliable information about available positions is harder to come by. By seeking information from more sources, job seekers increase the probability of finding new, non-redundant information, which increases the probability of finding an opening and being matched. Perhaps unsurprisingly, Holzer (1987) found that among young people, unemployed workers engaged in more extensive searches than their employed counterparts, and that more extensive searching increased the probability of receiving a job offer and ultimately new employment.

Although there are few comprehensive studies that examine how the local unemployment rate affects job searches, those that do show that under certain circumstances, job searchers do change their behaviors when the unemployment rate is high. In a study of temporary British port workers, Fevre (1989) finds that when there is surplus labor both manual laborers and employers rely more heavily on informal methods to meet their needs. Because the competition for the few available jobs is high, workers exploit social ties for recommendations as well as join waitlists and answer formal advertisements to increase their chances of being hired. When the labor market is tight, workers use all possible methods to gain employment: “They have to do something, anything to find and win work” (Fevre 1989: p104).

On the other end of the labor spectrum, Try (2005) shows that recent university graduates also respond to the unemployment rate in their local area. Norwegian university graduates who

lived in areas with a higher regional unemployment rate were more likely to use public employment services than graduates who lived in areas with lower regional unemployment rates. In general, the highly educated job seekers were hesitant to use public employment services because of the stigma associated with them. However, graduates living in regions with fewer available job opportunities used these services as an additional way to increase the likelihood of being offered a job. He concludes that this reliance on public employment services in regions with high unemployment rate shows that young workers are not completely mobile and instead participate in regional labor markets (Try 2005). Although Try's findings are informative, his study focuses only on a group of workers with many labor market advantages.

In contrast to Fevre (1989) and Try (2005), Haurin and Sridhar (2003) find that the local unemployment rate does not alter the duration of a job search and does not affect reservation wages. However, as with the previously mentioned studies, Haurin and Sridhar (2003) only look at unemployed searchers.

### *Young Workers*

This study focuses on the job search behaviors of a wide range of young adults under thirty. As discussed above, young workers rank low on labor queues and are vulnerable to being pushed down and out of the labor market. Furthermore, this group's labor market experiences are distinct from more mature workers because the first years of careers are marked by frequent job changes, and these early jobs are critical for future jobs and life-course outcomes.

For many workers, jobs in the first decade of work are critical for starting a chain-reaction of career development and wage growth. Job-to-job transitions, wage growth and employed job search are frequently a part of the early work experience (Keith and McWilliams 1999). Young workers' job mobility has been shown to be associated with wage growth (Keith and

McWilliams 1999; Tope and Ward 1992; Parsons 1991). Thus it is not surprising that nearly half of all employed men and women under the age of thirty have conducted a job search or plan to start searching for a new job while still employed (Parsons 1991). Job shopping is common among young workers looking to improve their job. Looking for a new job while employed is part of what Burdett (1978) calls an “optimal search strategy” (Burdett 1978). That is, searching while employed is essential for maximizing future wages and transitioning to a better job without long periods of unemployment. Young workers have lower wages than more advanced workers and therefore have more to gain from switching (Jovanovic 1984). Keith and McWilliams (1999) report that searching for a new job prior to voluntarily leaving a job results in a wage premium of nearly 20% for young female workers and 14% for young male workers.

Not only do young workers frequently search for a new job while employed, they also conduct job searches differently than more experienced workers (McDonald 2005). While older workers, especially in managerial and professional occupations, are more likely to rely on informal job matching and passive searching (Granovetter 1973, 1995; McDonald 2005), new entrants to the labor market lack the types of ties that can lead to good jobs and therefore rely on active, formal searches (McDonald 2005; Mau and Kopischke 2001). Studies of college graduates trying to find their first post-graduation job show that this group is more likely to depend on formal methods--like sending out resumes--than informal methods (Mau and Kopischke 2001; Try 2005) and have better success with formal methods (Allen and Keaveny 1980). One such study found that only 12% of recent college graduates used friends and family members to find a job while the majority sent out resumes. The majority of college graduates used multiple search methods, and unsurprisingly, those who did went on more job interviews (Mau and Kopischke 2001).

## Research Questions

How young people navigate job searches during a tight labor market is the focus of this paper. Although a handful of other studies have touched on the idea that economic climate affects job searching, no one study has looked at what factors exacerbate or mediate the effect of economic climate on both working and not-working young people's job searching behavior. For instance, while Try (2005) and Fevre (1989) find that unemployed workers have more extensive searches during times of unemployment, neither looks at employed searchers or different levels of education and skill.

This paper seeks to fill the holes in previous studies by testing the question of if, and how, young workers of all skill, education and employment statuses, change their job search behavior as both the local and national unemployment rates change. Following the literature, my analysis starts from the presumption that job search behavior is influenced by four sets of factors: demographic attributes, level of education, employment history and economic climate. I focus on two sets research questions and hypotheses.

*Question 1A: Do young adults respond to changes in the unemployment rate by changing their job search behaviors?*

*Question 1B: Do young adults respond more to changes in the local or changes in the national unemployment rate?*

By definition, during times of high unemployment, there are more job seekers than there are job openings. I expect the increased competition for jobs, along with the increased vulnerability of existing positions, to change the job search behaviors of both employed and not-working young adults. Active job seekers should behave in a way that increases their likelihood

of being matched with an employer and thus should increase the extensiveness of job searches. I expect that when the unemployment rate is higher, job seekers will use more job search methods.

I hypothesize that job seekers will respond more to the local unemployment rate than the national unemployment rate. Based on prior research, I assume that job seekers participate in local, not national, labor markets and therefore expect that they should respond to fluctuations in the local unemployment rate rather than the national unemployment rate. As discussed earlier, the local unemployment rate changes the shape of the labor market in which these searchers participate. Changes in the local unemployment rate alter the probability of a successful match between workers and employers and therefore, workers and hopeful workers should be more responsive to fluctuations in the local labor market than the national labor market.

*Question 2A: Do workers in more vulnerable jobs respond to changes in the labor market more than workers in more secure positions?*

*Question 2B: Do workers with more financial obligations, like spouses and children, respond more than unattached workers?*

Workers with low levels of education and skills or weak attachment to their job are more vulnerable to upticks in the unemployment rate because they are more likely to be pushed out of the labor market by more desirable workers. Therefore, I expect these workers to be more sensitive to changes in the unemployment rate and increase both their likelihood of searching and the extensiveness of searches. Those most likely to be pushed out of the labor market, or lose their jobs, should try to increase their chances of finding a job by exploiting more sources of information. Workers with more attachment to their current employer, on the other hand, should be less likely to respond to changes in the labor market because their positions are, presumably, more secure. Similarly, workers with higher levels of education are more desirable and therefore

less likely to be pushed completely out of the labor market. Therefore, workers with higher education should be less responsive to fluctuations in the unemployment rate.

Young adults who are married and/or parents often have more financial obligations to others. I expect this group of workers to respond more to the changes in the unemployment rate because they are at a greater risk of financial destabilization if they, or their partner, lose their job and do not have a new job to which to transition. These workers should actively try to protect themselves and their families by preparing for the worst.

### **Data and Model Specification**

My analysis uses data from the National Longitudinal Surveys of Youth 1997 Cohort (NLSY97) from 1999-2007. The NLSY is a nationally representative sample of persons born between 1980 and 1984. In 1999, respondents were between 14 and 18 years old; in 2007 they were between 22-26 years old. The main goal of the NLSY is to document respondents' education and work experiences and thus contains in-depth information about employers and jobs (Bureau of Labor Statistics Statistics). In addition to the publically available data, I also use restricted use geo-coded data from the Bureau of Labor Statistics. Included in the geo-coded information is the unemployment rate for the metropolitan statistical area in which the respondent resided for the month of March of each survey year. When the unemployment rate for the MSA is not available, the NLSY assigns the unemployment rate for the balance of the state (NLSY Geocode Codebook Supplement).

Using the longitudinal data, I created a person-spell data-structure for each period of employment and not-working. Employment spells are defined by the unique combination of a respondent and employer, and not-working spells are consecutive periods of time where a respondent is listed as unemployed, not in the labor force, or otherwise not associated with an

employer. I use this broad categorization of not-working (as opposed to strictly unemployed) for three reasons. First, the formal definition of the unemployed excludes who have never worked and those who have been unemployed for a long time. Secondly, using all “not-working” individuals allows comparison between those who conducted and those who did not conduct searches. Thirdly, many of the not-working respondents who were asked the job search questions answered they had not used any of these methods. I therefore conclude they did not conduct an active job search. I limit my analyses to spells for which the respondent was over 18 years old at the start of the spell, and was not enrolled in school.<sup>5</sup> I then further restricted my sample to include only spells that spanned the month of March, which enables me to link to Bureau of Labor Statistics data describing the unemployment rate for the metropolitan statistical area in which the respondent resided in the for this time. The final analytic employed and not-working samples contain only observations for which I have no-missing data<sup>6</sup>.

Table 1 shows the demographic make-up of the original NLSY97 sample as well as my constructed analytic samples. Consistent with general labor market trends, my sample of employed workers has smaller proportion of Black respondents and a larger proportion of Hispanic and non-Black, non-Hispanic than the original NLSY data, while my not-working sample has a larger proportion of both Black and Hispanic respondents. The proportion of males in the not-working sample is lower than the proportion of males in the original NLSY<sup>7</sup>.

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<sup>5</sup> Analysis was also run to include respondents listed as students. Students are less likely to search for a job than non-students. The other results reported in this paper do not differ.

<sup>6</sup> Due to the way the NLSY interview protocol, missing data is a trivial problem.

<sup>7</sup> Because the unit of observation in my study is employer or not-working spells as opposed to individuals, I do not include sample weights.

Table 1: Sample and Original NLSY Compositions

|                                    | Original NLSY | Employed Sample | Not-working Sample |
|------------------------------------|---------------|-----------------|--------------------|
|                                    | N=8984        | N=21259         | N=11142            |
| Percent Male                       | 51%           | 52.15%          | 47.64%             |
| Percent Black                      | 26.0%         | 23.93%          | 37.78%             |
| Percent Hispanic                   | 21.2%         | 22.54%          | 22.44%             |
| Percent Mixed Race                 | 0.90%         | 0.79%           | 0.99%              |
| Percent Non-Black;<br>Non-Hispanic | 51.90%        | 52.74%          | 38.79%             |

*Dependent Variable: Job Search Extensiveness*

The NLSY asks respondents about job searches multiple times during the survey. Unique to the survey years 1999-2007, the NLSY includes questions regarding if and how respondents looked for a new or another while with an employer as well as if and how they looked for a job while not associated with an employer. For each job search, respondents list as many search methods as they wish which the NLSY then categorizes into a discrete set of options. Job search options range from directly applying to an employer to placing an ad and from talking with friends and relatives to attending a job fair. The complete list of survey choices are listed in Table 2. The dependent variable I use in my models is the sum of the number of methods used by respondents for a given spell. Similarly to Holzer (1987), I interpret the number of job search methods as a measure of the extensiveness of the job search, such that the more methods used by respondents, the more extensive their job search. Respondents who reported using no methods are considered to have not conducted an active job search during that spell.

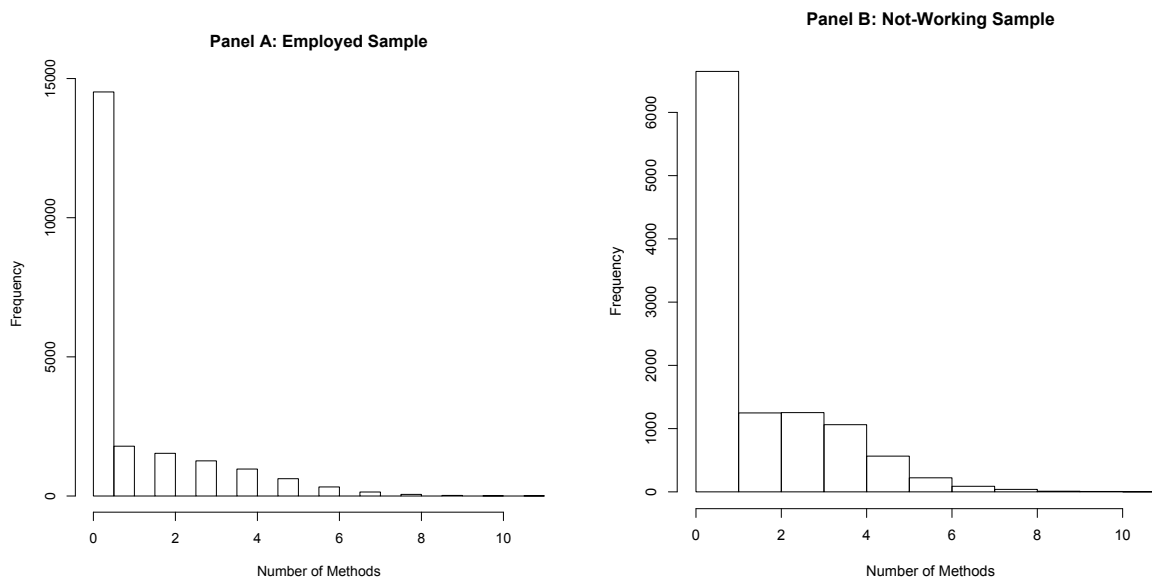
| Table 2: NLSY97 Job Search Methods          |
|---|
| Contacted employer directly                 |
| Contacted employment agency                 |
| Through friends or relatives                |
| Contacted school placement center           |
| Sent out resumes or filled out applications |
| Placed an ad                                |
| Checked union or professional registers     |
| Looked at ads                               |
| Employer contacted you directly             |
| Internet+                                   |
| Job Fair^                                   |
| Other                                       |
| Other active methods*                       |
| Attended job training program or course*    |
| Other passive methods*                      |
| +Not an option in 2000                      |
| ^Not an option 1999, 2000                   |
| *Not an option 1999-2007                    |

Table 3 and Figure 3 show the distribution of the number of methods used by job searchers. As reported in Table 3, relatively large fractions of both the employed and not-working spells included a job search: thirty-two percent of the employed sample conducted a job search while employed, while forty-nine percent of not working individuals reported using at least one job search method. Although the maximum number of methods used by any respondent is 11, most respondents use only a few search methods. Among employed respondents who search, the average number of methods is 2.88 and the average number for searching, not-working respondents is just over 3 methods. On average, not working respondents used slightly more methods than employed searchers. Holzer (1987) also found that unemployed youths conducted more extensive job searches than employed youths.

Table 3: Distribution of Job Search Methods

|                           | Employed | Employed-Searched | Not Working | Not-working Searched |
|---------------------------|----------|-------------------|-------------|----------------------|
| % Conducted Job Search    | 31.70%   | -                 | 48.89%      | -                    |
| Mean of Methods           | 0.91     | 2.88              | 1.50        | 3.07                 |
| St. Deviation of Methods  | 1.65     | 1.73              | 1.88        | 1.57                 |
| Maximum Number of Methods | 11       |                   | 11          |                      |

Figure 3: Distribution of Job Search Methods Used

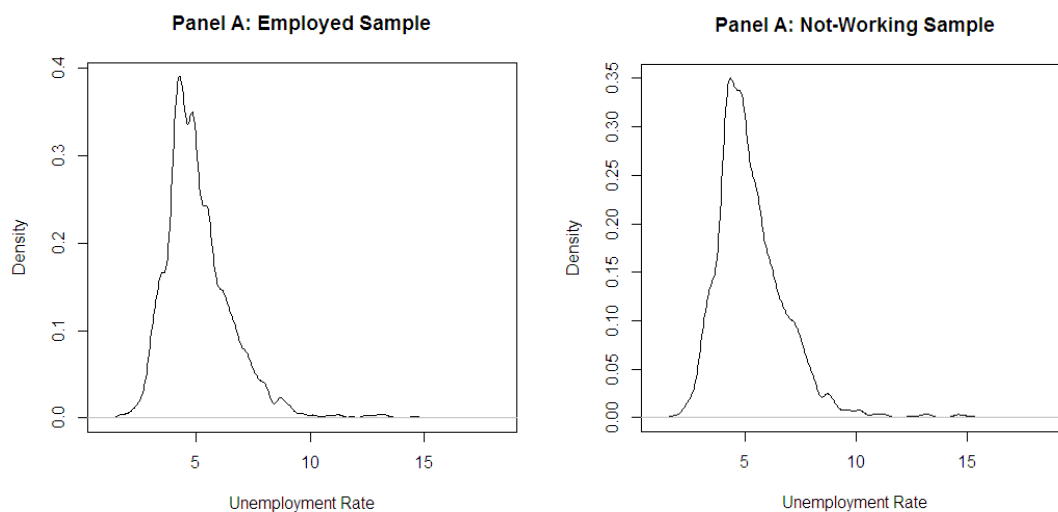


*Independent Variables: Unemployment Rate*

I use two measures of the tightness of the labor market: the national unemployment rate and the local unemployment rate. Unique to this study is the inclusion of the local unemployment rate as a key independent variable. Compared to the national unemployment rate, there is more variation in the unemployment rate in metropolitan areas (see Figure 1 above). Given this massive local variation, I exploit the NLSY’s geo-coded data to link respondents to the

unemployment rate associated with their local context. The local unemployment rate is measured for the metropolitan statistical area in which the respondent resided during March of the survey year. Figure 4 shows the distribution of the local area unemployment rate for the employed and not-working sample. On average, the local unemployment rate is slightly higher than the national unemployment rate and the variation is much greater: the average national unemployment rate for the employed sample is 5.03% and has a standard deviation of 0.622% while the average local unemployment rate for the employed sample is 5.11% and has a standard deviation of 1.55 percent.

Figure 4: Distribution of the local unemployment rate



### *Independent Variables: Controls*

The main analytical model in this paper posits that job search is a function of individual attributes, level of education, employment characteristics and the local and national unemployment rate. The distributions of the independent variables are listed in Table 4. It is important to keep in mind that the distributions are for distinct spells—many individual respondents appear in both the employed and gap sample multiple times. Some variables, like age, change over time and thus the average is for spells, not individuals. The NLSY97

categorizes race into four categories: Black, Hispanic, Mixed-Race (Non-Hispanic) and Non-Black/Non-Hispanic. I include dummy variables for if the respondent was married, a parent and living in an urban area at the time of the spell. I categorized educational achievement as the highest degree achieved (no degree, high school degree, college degree) at the time of the interview of the year in which the spell occurred. For not-working respondents, I include a measure of the length of not-working spell, measured in weeks, and for the working respondents, I include a measure of the duration of the time spent with their employer as well as a dummy variable for if employment is full time. The employed respondents' hourly pay is divided into wage quartiles based on the entire sample distribution. The four wage categories are: under \$7.75 an hour, between \$7.75-\$10.00, between \$10.00-\$13.70 and over \$13.70 dollars an hour.

Table 4: Distribution of Independent Variables

|   | Employed Sample | Gap Sample |
|---|-----------------|------------|
|   | N=21259         | N=11142    |
| Unemployment Rates                              |                 |            |
| Average National Unemployment Rate              | 5.03%           | 5.18%      |
|   | (0.622)         | (0.63)     |
| Average Local Unemployment Rate                 | 5.11%           | 5.27%      |
|   | (1.55)          | (1.64)     |
| Education                                       |                 |            |
| Percent No Degree                               | 13.88%          | 32.98%     |
| Percent High School Degree                      | 69.84%          | 63.01%     |
| Percent College Degree                          | 16.29%          | 4.00%      |
| Job Characteristics                             |                 |            |
| Average length of unemployment spell (in weeks) | -               | 31.48      |
|   |                 | (18.06)    |
| Average Job Duration (in years)                 | 1.82            | -          |
|   | (1.37)          |            |
| Percent Full Time                               | 72.12%          | -          |
| Wage  |                 |            |
| Hrly pay >\$7.75                                | 24.94%          | -          |
| Hrly pay: \$7.75-\$10.00                        | 22.46%          | -          |
| Hrly pay: \$10.00-\$13.70                       | 27.57%          | -          |
| Hrly pay: >\$13.70                              | 25.02%          | -          |
| Percent Male                                    | 52.15%          | 47.64%     |
| Average Age                                     | 21.49           | 21.80      |
|   | (2.07)          | (2.34)     |
| Percent in Urban Area                           | 80.50%          | 79.34%     |
| Percent Married                                 | 20.37%          | 16.31%     |
| Percent Parent                                  | 34.33%          | 48.49%     |
| Race  |                 |            |
| Percent Non-Black, Non Hispanic                 | 52.74%          | 38.79%     |
| Percent Black                                   | 23.93%          | 37.78%     |
| Percent Hispanic                                | 22.54%          | 22.44%     |
| Percent Mixed Race                              | 0.79%           | 0.99%      |

## **Analytic Strategy**

The dependent variable for this analysis is the number of methods used in a job search. My analytic approach treats conducting a job search as a two-step process: first, a worker must decide to search for a job and then must decide how. Respondents who did not search for another job have a value of zero for the dependent variable. As over half of each sample did not conduct an active job search, the sample has an abundance of zeros.

To estimate this two-step model, I used a hurdle model, which uses maximum likelihood estimation to separately estimate a logit model and a truncated count model. Because the variance exceeded the expected count the independent variable (total job search methods), I used a negative binomial distribution for the count portion of the hurdle model (Zeileis, Kleiber, and Jackman 2008). Hurdle models estimate two sets of coefficients: the first set of coefficients describe the probability of having an observation greater than a zero, while the second set of coefficients corresponds to a zero-truncated negative binomial model that estimates the positive values of the count data. The truncated negative binomial model is estimated conditional on the observation being a positive value (Zeileis, Kleiber, Jackman 2008). Substantively, the logit portion of the hurdle model estimates the probability of conducting a job search while the truncated negative binomial portion of the model estimates the extensiveness of the search. I used the Political Science Computational Library (“pscl”) package in R to run the ZINB model (Zeileis, Kleiber, Jackman 2008)<sup>8</sup>.

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<sup>8</sup> The same models were run with a zero-inflated negative binomial model. The ZINB model is similar to the hurdle model in that it estimates two sets of coefficients: a logit model for the abundance of zeros and a negative binomial model for the count data. However, the ZINB is a two-component mixture model that assumes that there are two sources of zeros: either a point mass of zeros and zeros that are part of the count distribution (Zeileis, Kleiber, Jackman 2008). A comparison of the log-likelihoods shows that the hurdle model is preferred to the zero-inflated negative binomial model. Results from the ZINB model were substantively similar to results from the hurdle model. Furthermore, substantively similar results occurred when a logit model was run separately from the negative binomial model.

Results from the hurdle models for the employed and not-working samples are presented in Table 5 – 8. The first columns for each model specification show the coefficients for the zero-hurdle portion of the model; these coefficients estimate the change in the log odds of observing a non-zero value for the dependent variable. I calculate the change in the odds of observing a positive value (a search) by exponentiating the zero-hurdle coefficients. In other words, a positive coefficient can be interpreted as the variable increasing the probability of a respondent conducting a job search, while a negative coefficient can be interpreted as a variable decreasing the probability of a respondent conducting a job search. The second column for each model specification shows the coefficients for the negative binomial portion of the hurdle model, which estimates the log of the expected count of the dependent variable. I exponentiate these coefficients to calculate the change in the expected number of counts. A positive coefficient can be interpreted as increasing the log of expected number of job search methods, whereas a negative coefficient can be interpreted as decreasing the log of expected number of job search methods.

## **Findings**

I first assess the hypothesis that young adults respond to changes in the unemployment rate by altering their search behaviors. The results of the analysis for both employed and not-working individuals are shown in Table 5. My results show support for the hypothesis that workers do adjust their search strategies as the unemployment rate changes. However, in contrast to my expectations, I find that it is the national, not local, unemployment rate that affects job search decisions.

Table 5: Results of Hurdle Models

|   | Employed Sample |               | Not-Working Sample |               |
|---|-----------------|---------------|--------------------|---------------|
|   | Zero-Hurdle     | Neg. Binomial | Zero-Hurdle        | Neg. Binomial |
| Intercept                                 | 0.980 ***       | -0.143        | -0.151             | 0.423 **      |
| Unemployment Rates                        |                 |               |                    |               |
| National Unemployment Rate                | -0.031          | 0.130 ***     | 0.156 ***          | 0.121 ***     |
| Local Unemployment Rate                   | 0.004           | -0.003        | 0.019              | 0.006         |
| Level of Education                        |                 |               |                    |               |
| No Degree (ref: HS degree)                | -0.211 ***      | -0.026 ***    | 0.015              | -0.136 ***    |
| College Degree (red: HS degree)           | 0.615 ***       | -0.130 ***    | -0.040             | 0.214 ***     |
| Work History                              |                 |               |                    |               |
| Full Time Dummy                           | -0.207 ***      | -0.016        | -                  | -             |
| Hrly pay: \$7.75-\$10.00 (ref: <\$7.75)   | -0.136 **       | 0.073 **      | -                  | -             |
| Hrly pay: \$10.00-\$13.70 (ref: <\$7.75)  | -0.305 ***      | 0.082 **      | -                  | -             |
| Hrly pay: >\$13.70 (ref: < \$7.75)        | -0.548 ***      | 0.053 .       | -                  | -             |
| Job Duration (in years)                   | -0.098 ***      | -0.013        | -                  | -             |
| Length of Not-Working Spell (in weeks)    | -               | -             | -0.017 ***         | 0.000         |
| Individual Attributes                     |                 |               |                    |               |
| Male Dummy                                | 0.021           | -0.018        | 0.188 ***          | -0.014        |
| Age                                       | 0.062 ***       | 0.016 **      | -0.019 *           | -0.001        |
| Urban Dummy                               | 0.202 ***       | 0.060 *       | 0.026              | 0.029         |
| Married Dummy                             | -0.046          | 0.014         | -0.581 ***         | -0.029        |
| Parent Dummy                              | -0.084 *        | -0.026        | -0.155 ***         | -0.012        |
| Black (ref: Non-Black, Non-Hispanic)      | 0.360 ***       | 0.151 ***     | 0.497 ***          | 0.073 ***     |
| Hispanic (ref: Non-Black, Non-Hispanic)   | -0.074 .        | -0.095 ***    | -0.044             | -0.084 **     |
| Mixed Race (ref: Non-Black, Non-Hispanic) | -0.264          | 0.078         | 0.210              | 0.007         |
| Log(theta)                                |                 | 2.027 ***     |                    | 18.283        |
| AIC                                       | 50029.25        |               | 34098.6            |               |
| Log Likelihood                            | -24980          |               | -17020             |               |
| Observations                              | 21259           |               | 11142              |               |

Significance level: .p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*P<0.001

Neither the national or local unemployment rate significantly predicts the likelihood initiating a job search among working young adults. That is, the probability of searching for a new job while employed does not appear to vary with fluctuations in the tightness of the labor

market. However, the odds of a not-working adult conducting a job search increase by 17% when the national unemployment rate increases by one-percent.

As predicted, among young adults who do conduct job searches, the number of expected methods used increases as the unemployment rate increases. A one percent increase in the national unemployment rate increases the number of expected job search methods used by over 13% for both employed and not working searchers. Respondents looking for a job during a tighter labor market use more methods compared to respondents searching in more prosperous times. For instance, an employed male with a college education is expected to use 1.0 search methods when the national unemployment rate is 2% but 1.44 methods when the national unemployment rate is 6%.

In accordance with the job shopping literature, employed young adults with higher wages, who work full time or have longer durations at their current employer have a lower probability of searching compared to workers who make less than \$7.75 an hour, work part time or have shorter employment durations. For instance, the odds of a worker who makes over \$13.70 an hour conducting a job search are 42% lower than the odds of a worker who makes less than \$7.75 an hour. Job search theory predicts that those with the most to gain (i.e. those with the lowest wages) will be more likely to look for a new job. My results support this proposition. However, my results also show that those with a college degree are more likely to search for a job while employed. The odds of a worker with a college degree searching for a job are 85% higher than the odds of a worker with a high school degree searching for a job.

When workers with higher wages conduct a job search, they do so by using more methods. Workers with higher wages and higher education use more methods than workers who make less and have lower levels of education. Compared to a worker with a high school degree, a worker

with a college degree is expected to use 18% more methods. The same pattern holds for not-working individuals: those with more education use more methods while those with less education use fewer methods. Workers with higher levels of education have access to job search methods that lower education workers do not. For instance, a worker who did not graduate high school or attend college does not have access to a school job center or school-based job fairs. The career and job services provided by many schools, both high schools and colleges, may also train searchers in better ways to look for jobs.

Black young adults, both working and not-working, are more likely to search for a job and to use more job search methods than similarly situated non-Black, non-Hispanic individuals while Hispanic workers are less likely to search for a job and use fewer methods than non-Black, non-Hispanics. There are no gender differences in the probability of extensity of search among employed workers. However, the odds of an unemployed male conducting a job search are 21% higher than the odds of an unemployed female. Being a parent reduces the likelihood of search for both employed and not-working young adults.

My second set of research questions focus on what types of young adults are more likely to respond to changes in the unemployment rate. The above discussion shows that workers in part-time jobs, who make more money and have shorter tenures at their current job are more likely to search for a job. Do these workers respond more to tightened labor markets than other workers? I hypothesized that more vulnerable workers, in terms of wages, employment duration and education, should respond more to tightening labor markets, as would married young adults and those with children. To test these hypotheses, I ran a series of models with interactions between individual characteristics and the unemployment rate. Because the results of my first

analysis suggested that young adults respond more to the national unemployment rate than the local unemployment rate, I ran the interactions using the national unemployment rate<sup>9</sup>.

I first assessed the role of education and job characteristics on job search behaviors. Table 6 shows the coefficients for a hurdle model with interactions between the unemployment rate and education and Table 7 shows the coefficients for the model with interactions between the unemployment rate and job characteristics. The results of both interaction models do not show support for the hypothesis that more vulnerable workers would increase their job search behaviors when the unemployment rate is high. Instead, I find that young workers with no degree use fewer methods when the unemployment rate is high. It is possible that high unemployment rates discourage these workers reducing the extensiveness of their searches. If these workers perceive their job prospects to be weak they may respond by giving up or devoting less time and energy to their searches.

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<sup>9</sup> The analysis was also run with interactions between the local unemployment rate and these characteristics. These interactions were not statistically significant nor was the local unemployment term.

Table 6: Results of Hurdle Models with Education Interactions

|   | Employed Sample |               | Not-Working Sample |               |
|---|-----------------|---------------|--------------------|---------------|
|   | Zero-Hurdle     | Neg. Binomial | Zero-Hurdle        | Neg. Binomial |
| Intercept                                 | 0.873 **        | -0.182        | -0.085             | 0.276 .       |
| Unemployment Rates                        |                 |               |                    |               |
| National Unemployment Rate                | -0.010          | 0.134 ***     | 0.144 ***          | 0.141 ***     |
| Local Unemployment Rate                   | 0.004           | -0.003        | 0.020              | 0.006         |
| Level of Education                        |                 |               |                    |               |
| No Degree (ref: HS degree)                | 0.199           | 0.285         | -0.109             | 0.215         |
| College Degree (red: HS degree)           | 0.097 **        | -0.037        | -0.618             | -0.148        |
| Education Interactions                    |                 |               |                    |               |
| No Degree * Nat. Unemployment             | -0.081          | -0.081 .      | 0.024              | -0.066 *      |
| College Deg. * Nat Unemployment           | -0.072          | 0.041         | 0.117              | 0.073         |
| Work History                              |                 |               |                    |               |
| Full Time Dummy                           | -0.207 ***      | -0.017        | -                  | -             |
| Hrly pay: \$7.75-\$10.00 (ref: <\$7.75)   | -0.134 **       | 0.074         | -                  | -             |
| Hrly pay: \$10.00-\$13.70 (ref: <\$7.75)  | -0.305 ***      | 0.082 **      | -                  | -             |
| Hrly pay: >\$13.70 (ref: < \$7.75)        | -0.548 ***      | 0.055 **      | -                  | -             |
| Job Duration (in years)                   | -0.098 ***      | -0.013 .      | -                  | -             |
| Length of Not-Working Spell (in weeks)    | -               | -             | -0.017 ***         | 0.000         |
| Individual Attributes                     |                 |               |                    |               |
| Male Dummy                                | 0.020           | -0.018        | 0.187 ***          | -0.013        |
| Age                                       | -0.062 ***      | 0.016 **      | -0.019 *           | 0.000         |
| Urban Dummy                               | 0.202 ***       | 0.061 *       | 0.026              | 0.030         |
| Married Dummy                             | -0.046          | 0.014         | -0.580 ***         | -0.028        |
| Parent Dummy                              | -0.083 *        | -0.027        | -0.156 ***         | -0.011        |
| Black (ref: Non-Black, Non-Hispanic)      | 0.356 ***       | 0.151 ***     | 0.497 ***          | 0.073 ***     |
| Hispanic (ref: Non-Black, Non-Hispanic)   | -0.074 .        | -0.096 ***    | -0.044             | -0.084 **     |
| Mixed Race (ref: Non-Black, Non-Hispanic) | -0.265          | 0.079         | 0.209              | 0.007         |
| Log(theta)                                |                 | 2.031 ***     |                    | 18.82 ***     |
| AIC                                       | 50030.65        |               | 340099.45          |               |
| Log Likelihood                            | -24970          |               | -17020             |               |
| Observations                              | 21259           |               | 11142              |               |

Significance level: .p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*P<0.001

Table 7: Hurdle Models with Job Characteristics Interactions

|   | Employed Sample |               |
|---|-----------------|---------------|
|   | Zero-Hurdle     | Neg. Binomial |
| Intercept                                     | 0.835 *         | -0.378        |
| Unemployment Rates                            |                 |               |
| National Unemployment Rate                    | -0.002          | 0.178 ***     |
| Local Unemployment Rate                       | 0.004           | -0.003        |
| Work History                                  |                 |               |
| Full Time Dummy                               | -0.308          | 0.205         |
| Hrly pay: \$7.75-\$10.00 (ref: <\$7.75)       | 0.410           | -0.089        |
| Hrly pay: \$10.00-\$13.70 (ref: <\$7.75)      | 0.248           | 0.158         |
| Hrly pay: >\$13.70 (ref: <\$7.75)             | -0.775 *        | -0.170        |
| Job Duration (in years)                       | -0.110          | 0.091         |
| Work History Interactions                     |                 |               |
| Full Time * Nat. Unemployment                 | 0.021           | -0.043        |
| Hrly pay: \$7.75-\$10.00 * Nat. Unemployment  | -0.107          | 0.032         |
| Hrly pay: \$10.00-\$13.70 * Nat. Unemployment | -0.110          | -0.015        |
| Hrly pay: >\$13.70 * Nat. Unemployment        | 0.048           | 0.044         |
| Job Duration * Nat. Unemployment              | 0.003           | -0.021        |
| Level of Education                            |                 |               |
| No Degree (ref: HS degree)                    | -0.211 ***      | -0.132 ***    |
| College Degree (ref: HS degree)               | 0.619 ***       | 0.168 ***     |
| Individual Attributes                         |                 |               |
| Male Dummy                                    | 0.022           | -0.018        |
| Age   | -0.062 ***      | 0.015 **      |
| Urban Dummy                                   | 0.202 ***       | 0.062 *       |
| Married Dummy                                 | -0.045          | 0.013         |
| Parent Dummy                                  | -0.085          | -0.025        |
| Black (ref: Non-Black, Non-Hispanic)          | 0.354 ***       | 0.150 ***     |
| Hispanic (ref: Non-Black, Non-Hispanic)       | -0.073          | -0.095 ***    |
| Mixed Race (ref: Non-Black, Non-Hispanic)     | -0.264          | 0.0777        |
| Log(theta)                                    |                 | 2.032 ***     |
| AIC   | 50036.19        |               |
| Log Likelihood                                | -24970          |               |
| Observations                                  | 21259           |               |

Significance level: .p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*P<0.001

To test the hypothesis that young adults with more financial obligations should increase their job searches when the unemployment rate is high, I ran models with interactions between the unemployment rate and dummy variables for married and having a child. In addition, I used interactions between marital and parental status and gender to investigate gender differences. The results from these models are presented in Table 8. Contrary to my predictions, I find no evidence to support the idea that those with financial obligations are more responsive to fluctuations in the unemployment rate. However, I do find that there are significant gender differences among both working and not-working young adults. Men who are married and men who are parents are more likely to conduct job searches than their female counterparts, a relationship that is not affected by changes in the unemployment rate. Married men and fathers may be under more normative pressure to provide for their families and thus continue to search for better job opportunities, regardless of the tightness of the labor market.

Table 8: Results of Hurdle Model with Family and Gender Interactions

|   | Employed Sample |  |               | Not-Working Sample |  |               |
|---|-----------------|--|---------------|--------------------|--|---------------|
|   | Zero-Hurdle     |  | Neg. Binomial | Zero-Hurdle        |  | Neg. Binomial |
| Intercept                                 | 0.981 ***       |  | -0.123        | -0.037             |  | 0.447 **      |
| Unemployment Rates                        |                 |  |               |                    |  |               |
| National Unemployment Rate                | 0.004           |  | 0.127 ***     | 0.159 ***          |  | 0.119 ***     |
| Local Unemployment Rate                   | 0.002           |  | -0.003        | 0.018              |  | 0.006         |
| Family Characteristics                    |                 |  |               |                    |  |               |
| Male                                      | -0.150 ***      |  | -0.033        | -0.000             |  | -0.048 *      |
| Married                                   | 0.635           |  | -0.213        | -0.837             |  | -0.029        |
| Parent                                    | -0.120          |  | 0.020         | -0.230             |  | -0.077        |
| Family Interactions                       |                 |  |               |                    |  |               |
| Male * Married                            | 0.310 ***       |  | 0.039         | 0.753 ***          |  | 0.124 *       |
| Male * Parent                             | 0.348 ***       |  | 0.030         | 0.219 **           |  | 0.052         |
| Married * Nat. Unemployment               | -0.166 *        |  | 0.042         | 0.007              |  | -0.010        |
| Parent * Nat. Unemployment                | -0.270          |  | -0.012        | -0.007             |  | 0.007         |
| Level of Education                        |                 |  |               |                    |  |               |
| No Degree (ref: HS degree)                | -0.219 ***      |  | -0.130 ***    | 0.008              |  | -0.138 ***    |
| College Degree (red: HS degree)           | 0.610 ***       |  | 0.167 ***     | -0.044             |  | 0.209 ***     |
| Work History                              |                 |  |               |                    |  |               |
| Full Time Dummy                           | -0.219 ***      |  | -0.018        | -                  |  | -             |
| Hrly pay: \$7.75-\$10.00 (ref: <\$7.75)   | -0.132 **       |  | 0.072 **      | -                  |  | -             |
| Hrly pay: \$10.00-\$13.70 (ref: <\$7.75)  | -0.310 ***      |  | 0.080 **      | -                  |  | -             |
| Hrly pay: >\$13.70 (ref: < \$7.75)        | -0.565 ***      |  | 0.052         | -                  |  | -             |
| Job Duration (in years)                   | -0.010 ***      |  | -0.013        | -                  |  | -             |
| Length of Not-Working Spell (in weeks)    | -               |  | -             | -0.016 **          |  | 0.000         |
| Individual Attributes                     |                 |  |               |                    |  |               |
| Age                                       | -0.064 ***      |  | 0.016 **      | -0.020             |  | -0.001        |
| Urban Dummy                               | 0.199 ***       |  | 0.060 *       | 0.024              |  | 0.029         |
| Black (ref: Non-Black, Non-Hispanic)      | 0.358 ***       |  | 0.151 ***     | 0.477 ***          |  | 0.069 ***     |
| Hispanic (ref: Non-Black, Non-Hispanic)   | -0.072          |  | -0.096 ***    | -0.045             |  | -0.084 **     |
| Mixed Race (ref: Non-Black, Non-Hispanic) | -0.255          |  | 0.082         | 0.216              |  | 0.008         |
| Log(theta)                                |                 |  | 2.029 ***     |                    |  | 10.866        |
| AIC                                       | 49980.35        |  |               | 34058.34           |  |               |
| Log Likelihood                            | -24950          |  |               | -16990             |  |               |
| Observations                              | 21259           |  |               | 11142              |  |               |

Significance level: .p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*P<0.001

## **Discussion and implications for further research**

The labor queue literature implies that workers looking for a new or different job should alter their search behavior as in response to fluctuations in the unemployment rate. Further reasoning suggests that because most workers are embedded in local – rather than national -- labor markets, those seeking a new job should respond more to the local unemployment rate than the national unemployment rate. My analysis of the job search behavior of young adults in the NLSY shows that these respondents do respond to fluctuations in the unemployment rate, but, surprisingly, it is the national and not the local unemployment rate that spurs change in search behaviors. In other words, these workers are not altering their behavior based on objective changes in the labor market in which they participate, but rather on a broader indicator of economic well-being.

Although the national unemployment rate has little impact on the propensity of employed workers to initiate a search, it does increase the expected number of search methods used by those who are looking for a new job. Faced with more competitive job markets, young workers increase the breadth of their searches to utilize more sources of information. This is logical, as during tight labor markets, active job seekers should use multiple sources of information to attempt to find new and different job leads to increase the likelihood they will be matched with a job. When the unemployment rate is high and job opportunities are few and far between, an active job searcher who uses multiple sources will have a better chance of not just finding a job opening, but finding the best possible job opening, reducing the likelihood that she will take a job beneath her skills and education. In other words, not only do more extensive searches increase the likelihood a searcher will be matched with a job, but extensive searches also reduce the likelihood that the employment match will result in underemployment.

Additionally, workers in more precarious employment situations do not respond to tightening labor markets more than workers in more secure positions. There are no significant interactions between the national unemployment and level of education, full-time status, wage level or job duration. This shows that workers further down on the labor queue are no more likely to change their search behaviors than workers who are better situated. This is unexpected as workers at the bottom of the labor queue should be more sensitive to changes in the opportunity structure of the labor market as they are most at risk of being pushed out of the labor market altogether. In short, young adults do not respond to changes in the local labor markets in which they participate nor do the most vulnerable workers respond more than more secure workers.

I presume that parents and spouses may be more likely to change their job search behaviors during times of high unemployment because they have more financial obligations and responsibilities to others. Although my findings do not find support for this hypothesis, it does not rule out the possibility that those with other types of financial debt or obligations, like mortgages and student loans, are more sensitive to changes in the labor market. Student loans are especially significant for young workers—the percent of students graduating with debt has nearly doubled over the last decade (Roksa and Arum 2012). Young workers who need to start making payments on their loans may be more sensitive to tight labor markets. If this set of workers feels pressure to start working immediately, they may increase the extensiveness of their job searches to be able to start paying off their loans.

The findings presented in this paper are important because they begin to shed light on the question of if and how young workers change their job search behaviors in response to changes in the labor market. It is clear that in some ways they do respond in a logical fashion. By increasing the extensiveness of their searches during tight labor markets, young workers increase

the likelihood of a potential employment match. However, the fact that it appears to be the national rather than the local unemployment rate that incites change in behaviors, raises a number of further research questions. To conclude, I propose two sets of ideas that should be further investigated to help understand how workers' understanding of their working environment translates into job search behaviors.

### *Objective vs. Symbolic Labor Market Conditions*

The national unemployment rate is more visible and may be more symbolically salient than the local unemployment rate. While individuals may not know the specific unemployment rate of their area, they may be well aware of the national headlines regarding the economy. Workers may know if the economy is, in general, doing well or doing poorly, but may not be able to discern the actual labor conditions in their local area. The monthly national jobs report is followed and discussed by news outlets much more frequently than local measures—especially when the reports are alarming and signal labor market trouble. Although the local news may cover a specific event, like a major lay off at a nearby plant, it may not cover the general economic condition of the area. However, national and local outlets alike circulate the national jobs report. The national economy may be more salient for job searchers because it can elicit both more hope and more despair among workers. These abstract feelings about the general economy may motivate job searchers in a way that fluctuations in opportunity structure of the local labor market cannot.

Another type of “symbolic” labor market may be that of a searcher’s friends, family and community. Workers, especially young workers, may rely on the experiences of the people around them as a measure of how easy or hard it is to find employment. Relying on networks as a way to gauge the labor market narrows the boundaries of a labor market making them even

more “local.” Furthermore, this information, while perhaps helpful in some regards, cannot fully capture the intricate dynamics of an entire labor market in an area.

#### *What is a Local Labor Market?*

A second important dimension of labor markets and job search that needs to be explored is the size of a worker’s relevant labor market. Crucial to my hypothesis that young workers should be more likely to respond to the local and not national unemployment rate is the idea that workers are not completely mobile and do not participate in a national labor market. However, there is little research as to what workers perceive as their local labor markets. What is the relevant size of the labor market for young workers? In other words, are young workers responsive to other “sizes” of local like city, neighborhood or state?

Furthermore, workers may be more global in their searches than I have assumed. In particular, during tight labor markets, workers may be more willing to expand their idea of a “local labor market” or to move for a job. For example, when jobs are plentiful, workers may prefer to have a shorter commute. As the number of job opportunities decreases, workers may be willing to expand the distance they commute for a job instead of waiting to find a job closer to home. Similarly, a worker may be more likely to move for a job or move to an area with more job prospects when the local unemployment rate in their area is higher. In other words, workers may respond to changes in the unemployment rate in their labor market by changing what their labor market is. An important next step in this line of research is looking at where searchers find jobs during tight labor markets.

#### **Conclusion**

The unemployment rate shifts the shape of the labor market by changing the level of competition for available jobs. As the shape of the labor market changes, the chance of a worker being matched to an employer also changes: a higher unemployment rate makes it more difficult

to find a job while a lower unemployment rate favors job searchers. This paper argued and subsequently showed, that job searchers should respond to these shifts in the labor market using more job search methods. By increasing the extensiveness of search, workers exploit more sources of information increasing the probability of being matched to an employer. This paper shows that young workers use more extensive searches as the national unemployment rate increases.

Workers navigating the labor market at the beginning of their careers face incredible uncertainty and pressure when the unemployment rate is high. Beginning a career when labor markets are tight can have detrimental long-term effects on careers and life courses. One way workers have control over the process of employment matching and can increase their likelihood of success in the labor market is to change their job search behaviors. The results of this study show that workers do just that: when workers are faced with difficult labor market conditions, they change their job search behaviors to, presumably, have better luck in the face of stiff competition. Young workers respond to the changing labor market by increasing the breadth of their job searches to seek out job search information.

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