

Unemployed People with Disabilities: Have the Barriers to Work Changed?

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Abstract

Nearly 30 years since the Americans with Disabilities Act was passed, people with disabilities continue to experience substantially higher levels of unemployment compared to people without disabilities. Considerable research has identified barriers to work faced by people with disabilities, but relatively little attention has been paid to whether barriers have changed over time. Using independently pooled cross-sectional data from the National Beneficiary Survey, I examine whether Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) beneficiaries experienced barriers to work differently over a 12-year period. The findings suggest that, in 2015, beneficiaries were more likely to report several barriers to work than in previous years, including a qualifications mismatch, having caregiving responsibilities, workplace inaccessibility, and a fear of losing benefits. The likelihood of reporting one barrier – not finding jobs of interest – decreased over time, while reports of several barriers did not change. Although unemployment among people with disabilities has been identified by policymakers and researchers as an urgent policy issue, there is little evidence that the barriers to work have improved.

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Background

Historical Context

In 1990, Congress passed the Americans with Disabilities Act (ADA, 1990; 42 U.S.C. §12101 et seq.), which was heralded as a major milestone in advancing the rights of people with disabilities (Burgdorf, 1991). The ADA's extension of civil rights protections was part of the federal government's broader aim of achieving "equality of opportunity, full participation, independent living, and economic self-sufficiency" (§ 12101(a)(7)) for people with disabilities. A primary means by which these goals are to be achieved, as articulated in the statute, is the reduction of barriers to the labor market. Title I of the law (§ 12101 et seq.) encourages greater economic participation of people with disabilities by prohibiting disability-based discrimination by employers, employment agencies, and labor unions. Employers are also mandated to implement "reasonable accommodations" that increase workplace accessibility and the ease with which people with disabilities can complete work functions (§ 12111(9)). The logic of ADA stipulated that reducing barriers to employment for people with disabilities would have the twin effect of alleviating material hardship and, thus, dependence on government benefits (Cooper, 1990). As Senator Harkin predicted in 1989, eliminating barriers to employment such as discrimination would "have the direct and immediate effect of reducing the Federal government's expenditure of over \$60 billion per year on disability benefits and programs that are premised on dependency" (Americans with Disabilities Act of 1989: Hearings on S. 933, 1989). Upon the bill's signing, President Bush predicted that the ADA would "open up all aspects of American life to individuals with disabilities." Barriers to work that were "inadequately addressed" by previous laws would be removed, the President signaled, and people with disabilities would enjoy expanded employment opportunities under the ADA's legal regime (The White House Office of the Press Secretary, 1990).

Unemployment of People with Disabilities

Has the future that was envisioned by Senator Harkin and President Bush come to pass? Labor economists disagree as to whether the ADA's antidiscrimination and reasonable accommodations provisions improved the employment opportunities for people with disabilities in the years following the law's enactment (Acemoglu & Angrist, 2001; Barnow, 2008; DeLeire, 2000; Hotchkiss, 2004; Jolls & Prescott, 2004; Kruse & Schur, 2003). What is clear, however, is that despite the expansion of civil rights protections under the ADA (F. Chan, Strauser, Maher, et al., 2010; Maestas, Mullen, & Strand, 2013), the implementation of numerous government-funded employment programs (Livermore & Goodman, 2009; United States Government Accountability Office, 2012), and a general trend toward less physically demanding work (Autor, 2015), people with disabilities continue to experience substantial barriers to full economic participation (Parker Harris, Owen, & Gould, 2012). The Census Bureau estimates that in 2017, about 7.6% of the working-aged population residing in the community – about 15.6 million people – were individuals with disabilities (U.S. Bureau of Labor Statistics, 2015). During that same year, the unemployment rate among people with disabilities fell to its lowest level in a decade (11%), and yet still remained higher than the peak unemployment rate among

people without disabilities during the Great Recession (9.3%; U.S. Bureau of Labor Statistics, 2015). Similarly, in 2017 29.3%¹ of people with disabilities between the ages of 16 to 64 were working, compared to 73.5% of people without disabilities. These gross disparities persist regardless of individuals' educational attainment, gender, race or ethnicity, or age (U.S. Bureau of Labor Statistics, 2018).

The economic marginalization of people with disabilities has far-reaching effects. High levels of unemployment not only contribute to high levels of poverty (Ball, Morris, Hartnette, & Blanck, 2006; Emerson, 2007), but are also associated with greater social isolation, depression, and civic and political exclusion (Egede, 2007; Saunders & Nedelec, 2014; Schur, 2002; Schur & Adya, 2012; Simpican, Leader, Kosciulek, & Leahy, 2015). In addition to these humanitarian consequences, many researchers have considered the low employment of people with disabilities in the context of fiscal responsibility and programmatic solvency. Longer unemployment spells are associated with a greater propensity to exit the labor force altogether (Rothstein, 2011) and, for people with health-related work limitations, to enroll in disability insurance programs (Autor, 2011; Kroft, Lange, Notowidigdo, & Katz, 2016; Krueger, Cramer, & Cho, 2014; Morton, 2013a; Nichols, Mitchell, & Lindner, 2013). These trends may be even more pronounced during economic downturns (Kaye, 2010; Mueller, Rothstein, & von Wachter, 2016; U.S. Bureau of Labor Statistics, 2015) when people with disabilities express stronger pessimism about their job prospects (O'Brien, 2013). Policymakers and some researchers have expressed concerns over the long-term sustainability of Social Security Administration (SSA) disability insurance programs (Burkhauser, Daly, McVicar, & Wilkins, 2014; Stapleton, O'Day, Livermore, & Imperato, 2006) in light of the increase in benefit claims over the last several decades (Maestas et al., 2013; Maestas, Mullen, & Strand, 2015). Many stakeholders have emphasized that reducing unemployment among people with disabilities is a key strategy to contain the growth in disability insurance program expenditures (Autor, 2011; Congressional Budget Office, 2016; Goss, 2010; Morton, 2013a; U.S. House of Representatives, 2013).

To that end, several federal and state initiatives have been implemented to improve the employment potential of people with disabilities. An analysis conducted by the Government Accountability Office in 2010 identified 45 programs, distributed across nine different federal departments or agencies, with a combined annual budget of more than \$4 billion. The report concluded that little was known about the programs' effectiveness and despite obligated expenditures, people with disabilities continued to experience high levels of poverty and low rates of employment (United States Government Accountability Office, 2012). Livermore and Goodman (2009) arrived at a similar conclusion in their review of 25 employment programs for people with disabilities. While "considerable effort has been undertaken" by the Congress and executive agencies, the authors found that few of the initiatives have demonstrated meaningful improvements in employment outcomes of people with disabilities. Other analyses have found that SSA programs that aim to increase the work activity of people with disabilities, such as Ticket to Work, the Benefit Offset National Demonstration, the Accelerated Benefits Demonstration, and the Youth Transition Demonstration, have produced either modest effects or no changes in employment (Fraker, Mamun, Honeycutt, Thompkins, & Jacobs Valentine, 2014; Mann & Wittenburg, 2012; Mathematica Policy Research and Abt Associates, 2015; Morton,

¹ I report the employment-population ratio, rather than the employment rate, because the former accounts for both the labor force participation rate as well as the employment rate.

2013b; Wittenburg, Mann, & Thompkins, 2013). Notably, many of the initiatives designed to directly address the vocational needs of people with disabilities have evolved to support individuals' navigation of an increasingly complex and uncoordinated employment services system (United States Government Accountability Office, 2012). Indeed, some suggest that, for people with disabilities, the fragmentation of employment support programs has become an institutional barrier to work in and of itself (Livermore & Goodman, 2009).

Barriers to Work

Despite observed disparities in employment, the majority of unemployed people with disabilities express a desire to work, including those receiving disability insurance benefits (Ali, Schur, & Blanck, 2011; Kessler Foundation, 2015). The persistently high rate of unemployment can be attributed to multiple sources. Many researchers argue that the structure of the disability benefits system disincentivizes beneficiaries from returning to work, though this claim has been contested (Bruyère, VanLooy, Schrader, & Barrington, 2016; Fogg, Harrington, & McMahon, 2010; Liebman, 2015; Maestas et al., 2013; Reno & Ekman, 2012; Weathers & Hemmeter, 2011; Wittenburg et al., 2013). Previous research has also examined non-programmatic factors that contribute to low levels of employment among people with disabilities. Traditional vocational or occupational rehabilitation models address what have been referred to as supply-side barriers (F. Chan, Strauser, Gerve, & Lee, 2010; F. Chan, Strauser, Maher, et al., 2010; Fraser, Ajzen, Johnson, Hebert, & Chan, 2011), such as job candidates' lack of education or qualifications (Dutta, Gerve, Chan, Chou, & Ditchman, 2008; Livermore & Goodman, 2009). For example, employers frequently question the productivity of potential employees with disabilities (Burke et al., 2013; Hernandez et al., 2008). Thus, following employer concerns, interventions have been designed to close candidates' skill gaps, develop their human capital, or increase their stamina and functioning (Ali et al., 2011; Arbesman & Logsdon, 2011; Bruyère et al., 2016; Hendricks, 2010; Livermore & Goodman, 2009; Sweetland, Howse, & Playford, 2012). Other supply-side barriers include fears of losing benefits or health insurance (Drake & Bond, 2008; Drake, Skinner, Bond, & Goldman, 2009; Phillips, Hunsaker, & Florence, 2012), lack of information about jobs (Lindsay, 2011; Wilson- Kovacs, Ryan, Haslam, & Rabinovich, 2008), and limited or unreliable transportation (Magill-Evans, Galambos, Darrah, & Nickerson, 2008; Ottomanelli & Lind, 2009).

Most employment services and interventions for people with disabilities focus on reducing supply-side barriers (Livermore & Goodman, 2009)². However, some researchers have argued that a sole focus on the perceived deficits of people with disabilities fails to account for contextual variables, like local levels of unemployment (J. Y. Chan et al., 2014), or structural conditions, like occupational stratification or segregation (Kaye, 2009; Maroto & Pettinicchio, 2014), that can influence employment opportunities. Other demand-side barriers to work that are commonly cited in the literature relate to biases and negative stereotypes held by employers (Burke et al., 2013; Kaye, Jans, & Jones, 2011). For example, previous research has examined discrimination against people with disabilities related to wages, promotions, hiring, and retaliation (Ameri et al., 2015; Bell, Berry, Marquardt, & Galvin Green, 2013; Bjelland et al., 2010; Gannon & Munley, 2009; McMahon et al., 2008; Schur, Kruse, Blasi, & Blanck, 2011; Vedeler, 2014). Other studies have identified employment barriers that developed from more subtle employer attitudes, such as hesitancy regarding the costs of workplace accommodations,

² Perhaps the most notable exceptions are tax credits for businesses that hire people with disabilities (26 U.S.C. § 44, 51, 190, 1990),

fears of litigation, and the cognitive devaluation of the competence of people with disabilities (Ali et al., 2011; Burke et al., 2013; Copeland, Chan, Bezyak, & Fraser, 2010; Kaye et al., 2011; Lindsay, 2011; von Schrader, Malzer, & Bruyère, 2014). Some advocates of demand-side approaches have placed an emphasis on employing people with disabilities in growth industries (National Science Foundation, National Center for Science and Engineering Statistics, 2017). However, as a report by the Department of Labor suggested (Bartolotta, Skaff, & Klayman, 2014) it is important to address employers' negative perceptions in order for demand-side recruitment efforts to be successful (F. Chan, Strauser, Maher, et al., 2010).

Rationale

One important limitation in previous studies on employment barriers experienced by people with disabilities is their reliance on data from a single point in time. To my knowledge, there have been no published studies on barriers to work that have used longitudinal or pooled cross-sectional data. There are several reasons that one might expect barriers to work to have changed over time. On the demand-side, labor market trends may affect the types of jobs that are available for people with disabilities, and jobs in growth industries may be more or less accommodating to the needs of workers with disabilities (Schur et al., 2011; Shuey & Jovic, 2013; Wilkin, 2013). It is also possible that the business climate impacts the tolerance with which employers are willing to absorb perceived costs (Yellen, 2010) associated with workplace accommodations, and therefore their willingness to hire and retain workers with disabilities (Bruyère et al., 2016; Burke et al., 2013; Kaye et al., 2011). These temporal, demand-side factors could impact supply-side barriers as well. The extent to which health conditions pose work limitations for people with disabilities likely depends on the types of jobs that are available (Kaye, 2010; Livermore & Honeycutt, 2015). Finally, the ability of employment services, such as vocational rehabilitation, to address supply-side barriers is contingent upon state and federal funding (Honeycutt, Bardos, & McLeod, 2015; Honeycutt, Thompkins, Bardos, & Stern, 2017), which is subject to large annual fluctuations (United States Department of Education, Rehabilitation Services Administration, 2018). Because these and other time-varying, exogenous factors may impact the labor market experiences of people with disabilities, it is important to regularly assess whether the barriers to work have also changed over time. Such analyses can be used to ensure that interventions and policies target the current, rather than historical, needs of unemployed people with disabilities.

This Study

The motivating research question for this study is whether the barriers to work for unemployed people with disabilities have changed over time. I analyzed the reasons for not working that were provided by unemployed Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) beneficiaries, and whether these reasons varied across a 12-year period. This time period spans the five rounds of the National Beneficiary Survey. I also examined differences in perceived employment barriers by benefit type (i.e. SSI, SSDI, or concurrent benefits). While SSI and SSDI define disability in nearly the same way, distinctions between the programs' eligibility criteria may contribute to observed differences in employment barriers (Livermore, 2011; U.S. Social Security Administration, 2017a, 2017b, 2018). For example, SSI beneficiaries tend to have more limited work experience (Ben-Shalom & Mamun, 2015; Bond, Xie, & Drake, 2007) whereas SSDI recipients are required to have a considerable history of paid employment in order to qualify for benefits (Livermore, 2011; Livermore,

Goodman, & Wright, 2007; Maestas et al., 2013). Work experience may shape the ease with which one is able to re-enter the labor force and therefore the barriers that one encounters. An analysis by the Bureau of Labor Statistics (2013) found that unemployed people with disabilities with no work history were more likely to report at least one barrier to work as compared to people with previous work experience. The two programs also differ with respect to income requirements. SSI is a means-tested program, and beneficiaries are also required to have very low incomes and few financial assets (U.S. Social Security Administration, 2011). SSDI, on the other hand, is provided to people who meet the disability and work experience criteria regardless of income or assets (U.S. Social Security Administration, 2005). Consequently, SSI beneficiaries tend to be of a much lower incomes than SSDI recipients (Livermore, 2011). Income and social capital influence how one finds a job (Granovetter, 1995; Lin, 2008), so differences in socioeconomic status may contribute to variations in employment barriers reported by beneficiaries of the two programs (Lindsay, 2011). I also examined barriers to work by gender, and whether temporal changes in barriers differed for men and women. Trends toward greater gender equality in employment have stalled since the 1990s (Blau, Brummund, & Liu, 2013; Cohen, Huffman, & Knauer, 2009) and high levels of occupational sex segregation continue to persist (Cha, 2013; Gauchat, Kelly, & Wallace, 2012). Work remains highly gendered and men and women tend to fill different jobs as a result of discrimination and other factors (Bobbitt-Zeher, 2011; Cech, 2013; Charles & Bradley, 2009). Because men and women have differential access to job information, and therefore job opportunities, (McDonald, Lin, & Ao, 2009), it is important to consider gender differences in barriers to work among people with disabilities.

The findings of this analysis will have several policy implications. As a general consideration, a finding that there has been a decrease in perceived barriers will offer evidence that progress has been made in certain areas of the job-seeking or job-acquisition experience. On the other hand, because employment barriers for people with disabilities have been the target of multiple intervention efforts and considerable program expenditures, evidence that barriers have increased or remained unchanged may signal the need for alternative or refined strategies.

Methods

Data

This report presents the results of an analysis of the Social Security Administration's National Beneficiary Survey (NBS), a nationally representative survey of Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) beneficiaries. The target population consists of beneficiaries in all 50 states and Washington, DC who were in active pay status in the year preceding the survey. The NBS has been administered in five rounds: 2004 (Round 1), 2005 (Round 2), 2006 (Round 3), 2010 (Round 4), and 2015 (Round 5). Rounds 1-4 also included samples of Ticket to Work (TTW) participants. This analysis only includes what SSA refers to as the representative beneficiary samples; the TTW samples are excluded. The NBS uses a three-stage sampling design based on SSA data regarding the number of working-age beneficiaries in each county and state. The probability proportional to the countywide count of beneficiaries was used to select the primary sampling units (PSUs). Sampling units were then created based on the two largest certainty PSUs according to zip code (Los Angeles County, CA and Cook County, IL). Six secondary units were selected within the two PSUs. Samples were chosen based on four age-specific strata. The sample sizes, response rates, and number of completed interviews for each NBS round are presented in Table 1 (Mathematica Policy Research, 2009b, 2009c, 2010, 2012, 2017).

[Table 1 here]

In each sample, approximately 40% of respondents were SSI beneficiaries, 40% were SSDI beneficiaries, and 20% were beneficiaries of both programs (hereafter *concurrent beneficiaries*).³ Because the NBS consists of random samples of beneficiaries, I was able to append the five rounds into an independently pooled cross-sectional data set. Year dummies were generated to allow the intercepts to vary, as the rounds may not have identical distributions (Wooldridge, 2013). This also allows for an analysis of differences over time. The appended data set consisted of 20,252 observations.

Analytic Sample

Unemployed respondents were asked a series of questions about why they were not working. These questions constitute what I refer to as “barriers to work.” There were two different skip patterns used in the surveys. In rounds 1-3, the barriers questions were asked to all respondents who reported in a previous question that they were not working. In rounds 4 and 5, in addition to skipping respondents who were not working, the barriers questions were also skipped for respondents who responded that they had looked for work in the previous 4 weeks. I applied this exclusion criteria – not working and not having looked for work – to rounds 1-3 to ensure consistency in the sample. This resulted in a sample of 17,197 observations.

Missing data on measures of interest ranged from .03% to 5.2%. I implemented Little’s (1988) test for data missing completely at random (MCAR) in Stata (Li, 2013). The procedure is similar to a likelihood-ratio test for a multivariate normal model with an asymptotic χ^2 distribution. There was not evidence that the missing data was MCAR, but the tests passed the covariate-dependent missingness (CDM) assumption (all $p > .05$). According to Little (1995), complete case analysis when data is CDM produces unbiased estimates. Therefore, I proceeded by analyzing the sample of respondents with observed data on all relevant variables. The final sample size was 14,531, representing a population of 38,998,013 SSDI and SSI beneficiaries when weighted.

Measures

Dependent variables. In all five waves, respondents were asked the following yes-or-no questions: “Are you not working because ...”

- ...of a physical or mental health condition?
- ...you cannot find a job that you are qualified for?
- ...you do not have reliable transportation to and from work?
- ...you are caring for someone else?
- ...you cannot find a job you want?
- ...you are waiting to finish school or a training program?
- ...workplaces are not accessible to people with your disability?
- ...you do not want to lose benefits such as disability, worker's compensation, or Medicaid?
- ...your previous attempts to work have been discouraging?

³ This distribution changes once adjusted for the probability weights.

- ...others do not think you can work?
- ...employers will not give you a chance to show that you can work?
- ...you cannot find a job, or the job market is bad?
- ...you lack skills?

The last two barriers in the list above were generated by contractors based on “back-coding” of an item that asked respondents if there were “other reasons” why they were not working (Mathematica Policy Research, 2009a). In rounds 3-5, respondents were also asked if they were not working because:

- ...you do not have the special equipment or medical devices that you would need to work?
- ...you cannot get the personal assistance you need in order to get ready for work each day?

If a respondent answered “yes” to a question, they were considered to have experienced that associated barrier to employment.

Independent variables and covariates. The main predictors of interest were five dummies representing the years in which the NBS was administered: 2004, 2005, 2006, 2010, and 2015. The models included the following sociodemographic covariates: beneficiary sex (male, female); ethnicity (white, non-white); age (18-25, 26-40, 41-55, 56-64 years); marital status (married, unmarried); living arrangement (lives with relatives or a spouse, lives alone or with unrelated others); whether the respondent lives in a residence for people with disabilities (yes, no); income relative to the federal poverty level (under 100%, 100-199%, 200-399%, 400% or more); received government aid other than Social Security in the previous month, including Veteran’s Benefits, public assistance, SNAP, or other forms of housing, energy, or food assistance (yes, no). No information about respondent race is available in the public use data. The age and marital status categories were provided in the public use data.

An additional sociodemographic covariate included in the models relates to respondents’ education and partially accounts for the age distribution of the sample. The measure is equal to educational attainment for individuals in the 26-40, 41-55, and 56-64 age brackets. The measure is set equal to the imputed value of the educational attainment of respondents’ mothers or fathers, whichever higher,⁴ for respondents aged 18-25 years and who may still be attending school. Constructing the education measure in this way allows for more meaningful comparisons across levels of respondents’ social capital rather than educational attainment per se. The “educational social capital” measure has the following values: less than high school degree or no GED; earned a high school degree or equivalent; received some college education; and earned a four-year degree or higher. These categories were provided in the public use data.

The models also included several potential confounding variables related to employment. The analyses adjusted for whether respondents were “work-oriented,” defined by Livermore (2011) as someone who either “strongly agrees” or “agrees” that he or she will work for pay next year or in the next five years. Those who reported that they disagreed or strongly disagreed with both questions were identified as not being work-oriented. In addition, the models controlled for

⁴ If people with disabilities have lower educational attainment in general, one might argue that imputing younger respondents’ level of education with parent education could inflate the “educational social capital” for those aged 18-25 years. Nevertheless, the “educational social capital” measure with imputed values and the original educational attainment variable are highly correlated: $\alpha=.90$, $p<.001$. Models estimated with each of the two versions of the education measure produced consistent results.

whether respondents: ever worked for pay; received employment services and supports during the previous year; and reported having unmet needs for services, equipment, or supports that would have improved their “ability to work or live independently.” Each of these covariates were dichotomous, yes-or-no measures.⁵ The analyses also adjusted for several health-related measures including: whether the interview was conducted by a proxy or the respondent; the onset of disability (during childhood or adulthood); a count of the number of limitations in activities of daily living (ADLs: difficulty getting in and out of bed, difficulty getting around outside, difficulty getting around inside, difficulty bathing or dressing, difficulty eating, difficulty standing, difficulty walking, difficulty using hands or fingers); a count of the number of limitations in instrumental activities of daily living (IADLs: difficulty shopping, difficulty preparing meals, difficulty lifting and carrying 10 pounds, difficulty stooping, difficulty reading overhead); diagnosis category (mental illness, cognitive disability, musculoskeletal condition, sensory disorder, or other); and self-rated health (very poor/poor, fair/good, or very good/excellent). Finally, three measures related to respondents’ Social Security benefits were included as covariates, including: the benefit type (SSI, SSDI, or concurrent SSI and SSDI benefits); amount in SSDI or SSI payments received last month (top-coded at \$2,900, measured in 100s); the number of months since the earliest SSI or SSDI entitlement date (top-coded at 480, measured in 10s). Table 2 displays all variables included in the analysis for reference.

[Table 2 here]

Analysis Plan

Descriptive statistics were calculated for all study covariates and dependent variables. I stratified the descriptive statistics by study year as I am interested in variation across rounds of the NBS. Pairwise differences were computed with 2015 as the reference for each comparison (i.e. 2004 vs. 2015; 2005 vs. 2015, etc.). Significant differences between years were assessed for categorical variables using Pearson chi-squared statistics with a second-order Rao-Scott correction, and adjusted Wald test statistics were used for continuous variables (Lee & Forthofer, 2006; Rao & Scott, 1984). Descriptive statistics were also calculated for the outcome measures stratified by benefit type (SSI, SSDI, concurrent SSI and SSDI) and gender. Because the distribution of ADL limitations was positively skewed, I also conducted a nonparametric equality of medians test to verify that the results of the adjusted Wald tests were correct.

Next, I directly examined whether barriers to work varied across NBS rounds. I estimated a series of logistic regression models controlling for all covariates described above. The models included year dummies for 2004, 2005, 2006, and 2010 so that changes over time could be modeled relative to the most recent survey year, 2015 (which was omitted). For each dichotomous barrier outcome, the logit model was estimated as:

$$\Pr(\text{barrier} = 1) = F(\beta_0 + \beta_{\text{year}_{2004}}2004 + \beta_{\text{year}_{2005}}2005 + \beta_{\text{year}_{2006}}2006 + \beta_{\text{year}_{2010}}2010 + \dots + \beta x_k + \mu)$$

⁵ It may be that beneficiaries’ experiences with barriers to work influence their orientation toward work. In other words, the direction of causality between “work-oriented” and barriers may be the reverse of what the models propose. In this case, it may not be appropriate to include “work-oriented” as a predictor. I re-ran all of the models without controlling for “work-oriented” and found the results to be consistent in direction and significance as those that included the variable.

where x_k is a vector of control variables. When computing the descriptive statistics, however, it became clear that it would also be worthwhile to model changes in barriers relative to 2010. Thus, I re-estimated all of the models with the same parameterization, except with 2010 omitted rather than 2015. I exponentiated the coefficients and present the results as odds ratios. All analyses were adjusted with probability weights and account for the NBS's complex sample design. Taylor series linearization procedures were used for the sampling variance estimates, per the recommendation of the NBS (Mathematica Policy Research, 2017).

Finally, I analyzed differences in barriers to work by gender and benefit type and whether changes over time varied for different groups. To do this, I included interaction terms between the year dummies and gender and year dummies and benefit type. Because the odds ratio measures the effect of a change in one variable while holding all others constant, it cannot be used to interpret interaction effects (Long & Freese, 2014). Therefore, I interpret the results of the models with interaction terms with predicted probabilities. First, I calculated probabilities of reporting a given barrier for each group of interest (i.e., men and women; SSI, SSDI, and concurrent beneficiaries) for each survey year. I modeled the changes over time for contrasts between the first four years and 2015. To do this, I calculated the discrete change at the mean (DCM), or a first difference for each group across relevant year dummy contrasts, holding all other covariates at their means. From the interaction of gender and year dummies, this can be illustrated for *female* beneficiaries between 2004 and 2015:

$$\text{DCM} = \frac{\Delta \Pr(\text{barrier} = 1 \mid \bar{x}, \text{female} = 1)}{\Delta \text{year} (\text{year}_{2004} \rightarrow \text{year}_{2015})}$$

As in the logit model, I also estimated differences using 2010, rather than 2015, as the reference year. Finally, because the coefficients and significance levels of interaction effects in nonlinear models are unreliable (Ai & Norton, 2003), I follow current methodological convention and interpret the results by calculating second differences (Ai & Norton, 2003; Berry, DeMeritt, & Esarey, 2010; Cornelißen & Sonderhof, 2009; Long & Freese, 2014). This is a test of whether the difference between two first differences is significantly different from zero:

$$H_0: \frac{\Delta \Pr(\text{barrier} = 1 \mid \bar{x}, \text{female} = 1)}{\Delta \text{year} (\text{year}_{2004} \rightarrow \text{year}_{2015})} = \frac{\Delta \Pr(\text{barrier} = 1 \mid \bar{x}, \text{female} = 0)}{\Delta \text{year} (\text{year}_{2004} \rightarrow \text{year}_{2015})}$$

Rejection of the null indicates that the effect of change over a given time period varies between groups with respect to the probability of reporting the barrier to work. The standard errors for the discrete changes and second differences were computed using the delta method, a first-order Taylor series approximation (Wooldridge, 2010; Xu & Long, 2005).

Results

Descriptive Statistics

The weighted, nationally representative sample corresponds to over 39 million working-aged people with disabilities receiving Social Security benefits from 2004, 2005, 2006, 2010,

and 2015. In each year, approximately one-third of respondents were beneficiaries of SSI, one-half of SSDI, and one-sixth were concurrent beneficiaries. Tables 3 and 4 present weighted descriptive statistics of sociodemographic and health characteristics and information about respondents' Social Security benefits, stratified by year. Significant differences between years are indicated in the right-most column. The contrasts are of 2015 (round 5) relative to each of the other four years (rounds 1-4). With respect to sociodemographic characteristics (Table 3), differences by NBS round were found for respondent age, educational social capital, work-orientation, and ever having worked for pay. There were also temporal differences in beneficiary status (i.e., benefit type), whether the interview was conducted by a proxy, age of disability onset, number of ADL limitations, diagnosis, benefit amount, months since the initial benefit entitlement, unmet needs or services, and having received government aid (Table 4).

[Table 3 here]

[Table 4 here]

Table 5 presents frequencies of beneficiary reports of employment barriers. Recall that a respondent can identify more than one barrier as the reason why he or she is not working, so the columns sum to more than 1.

[Table 5 here]

In each round of the survey, about 95 percent of beneficiaries reported health limitations as a barrier to work.⁶ Following poor health, the most frequently cited barriers were being discouraged by previous job searches, qualifications mismatch, inaccessible workplaces, and others perceiving that the respondent cannot work. Very few beneficiaries reported a lack of skills or a bad job market as the reasons that they were not working, likely because the measures were generated post-hoc by the survey contractor (Mathematica Policy Research, 2009a). In addition, fewer than 4% of respondents indicated that they were not working because they were finishing school or training. Figure 1 displays the prevalence of barriers to work in rank order, aggregated across all five NBS rounds.

[Figure 1 here]

Table 6 presents the frequencies with which beneficiaries reported employment barriers, aggregated across all five NBS rounds and stratified by benefit type. Information in the right-most column indicates significant differences, based on chi-squared tests, between respondents receiving SSI, SSDI, or concurrent benefits. With the exception of the health limitation barrier, a larger proportion of SSI beneficiaries reported experiencing each of the barriers for which there

⁶ By way of comparison, an analysis by the Bureau of Labor Statistics found that 80% of people with disabilities who were unemployed reported their disability was a barrier to work. The data, which came from the 2012 Current Population Survey, defined people with disabilities using the six ACS screening questions (U.S. Bureau of Labor Statistics, 2013).

were significant SSI-SSDI differences. Table 7 indicates that men and women with disabilities differed in the frequency with which they reported certain barriers to work. Care responsibilities was a more commonly reported by women, whereas a larger proportion of men reported each of the other barriers for which there were significant differences.

[Table 6 here]

[Table 7 here]

Results of Base Models

The results of the first set of logistic regression models are presented in Tables 8 – 13. The tables alternate between 2015 and 2010 as the dummy year that was omitted. The models were parameterized in exactly the same way regardless of the reference year. The tables with 2015 as the reference include the results for all of the covariates. The tables with 2010 as the reference do not include the results for the covariates because they are redundant. In the interest of space, I will not discuss significant findings for covariates unless they are relevant. I do not present results of the models for “lacks skills” or “bad job market” because fewer than 1% of respondents gave either reason for not working.

Health limitation. As noted in the descriptive statistics, nearly all of the respondents reported their health as a reason for not working. There were no changes over time with respect to beneficiaries perceiving health as a barrier to work (Tables 8 and 9), nor were there differences by gender or benefit type (Table 8).

Qualifications mismatch. Beneficiaries had significantly lower odds of reporting qualifications mismatch as a barrier to work in 2010 than in 2015 ($p < .05$; Table 8). When the reference year is changed, I find that beneficiaries in 2004 ($p < .01$), 2005 ($p < .01$), and 2006 ($p < .01$) were all more likely to report qualifications mismatch than those in 2010 (Table 9). Thus, while the odds of reporting qualifications mismatch decreased in 2010 relative to 2004–2006, they increased again in 2015 to a level similar to the first three years. There were also gender differences in perceiving qualifications mismatch. Women were 27% less likely than men to report not being able to find a job that for which they were qualified ($p < .001$; Table 8).

Unreliable transportation. There were no changes over time in the odds of reporting unreliable transportation (Tables 8 and 9), nor were there differences between men and women. There was variation by benefit type, however. SSI beneficiaries had 24% higher odds of reporting transportation barriers than concurrent beneficiaries ($p < .01$) but did not have different odds compared to beneficiaries receiving only SSDI (Table 8). There were also no differences between SSDI and concurrent beneficiaries (results not shown).

Caring for someone. Unemployed people with disabilities were about 25% less likely to report care responsibilities as a reason for not working in 2004 compared to 2015 ($p < .05$; Table 8). Beneficiaries were also significantly less likely to report care responsibilities as barrier in 2004 and 2005 than in 2010 (both $p < .01$; Table 9). Women were significantly more likely to report caring for someone else as a reason for not working compared to men ($p < .001$). The odds of care responsibilities as an employment barrier were also higher among SSI beneficiaries compared to SSDI or concurrent beneficiaries (both $p < .01$; Table 9).

[Table 8 here]

[Table 9 here]

No jobs of interest. In 2004, beneficiaries were significantly more likely to report that they were not working because there were no jobs available that they wanted as compared to beneficiaries in 2015 ($p < .05$, Table 10) and 2010 ($p < .01$; Table 11). Women had lower odds of reporting no jobs of interest as a barrier to work compared to men ($p < .01$; Table 10), and there were no differences by benefit type.

Finishing school or training. There were no differences across NBS rounds in the odds of beneficiaries reporting that they were unemployed because they were finishing school or training (Tables 10-11). There were also no statistical gender differences in this barrier. Compared to SSI recipients, SSDI beneficiaries had about 32% lower odds of reporting participation in school or training as a barrier to work (Table 10). SSDI beneficiaries were less likely to report this barrier compared to concurrent beneficiaries at a level that approached statistical significance ($p = .057$, not shown), and there were no differences between SSI and concurrent beneficiaries.

Workplace inaccessibility. Unemployed people with disabilities had 21% higher odds of reporting inaccessible workplaces as a barrier to work in 2015 compared to 2005 ($p < .05$; Table 10). Beneficiaries in 2015 also had about 29% higher odds of reporting inaccessible workplaces than in 2010 ($p < .05$, Table 11). There were no differences by benefit type in reporting workplace inaccessibility. Women had 21% lower odds than men of reporting challenges with accessibility as the reason for not working ($p < .001$; Table 10).

Fear of losing benefit. Beneficiaries in 2004 were significantly less likely to report a fear of losing benefits as the reason for not working compared to beneficiaries in 2015 ($p < .05$; Table 10) and beneficiaries in 2010 ($p < .05$; Table 11). There were no differences by gender or benefit type in reports of this barrier.

[Table 10 here]

[Table 11 here]

Discouraged by previous job search attempts. There were no differences over time, by gender, or by benefit type in beneficiaries' reports of not working due to discouragement from previous job search attempts (Tables 12 and 13).

Others do not think the respondent can work. There were no differences across NBS rounds in beneficiaries reporting that they were not working because others did not think they could work (Tables 12 and 13). There were also no differences by benefit type. Men had 21% higher odds than women of reporting that others did not think they could work ($p < .001$).

Employers will not give the respondent a chance. There were no changes over time in beneficiaries reporting that they were not working because employers would not give them a chance (Tables 12 and 13). Women were significantly less likely to report this as a barrier to

work compared to men ($p < .001$; Table 12). SSDI beneficiaries were also more likely to report that employers would not give them a chance compared to SSI beneficiaries ($p < .05$) and marginally more likely than concurrent beneficiaries ($p = .093$, not shown).

Need for personal care assistance. There were no differences in reports of not working due to unmet needs for personal care assistance between beneficiaries in 2006, 2010, and 2015 (Tables 12 and 13). There were also no significant gender differences, nor were there differences by benefit type.

Need for special equipment or devices. There were no differences in reports of not working due to unmet needs for special equipment or devices between beneficiaries in 2006, 2010, and 2015 (Tables 12 and 13). There were also no significant gender differences, nor were there differences by benefit type.

Results of Interaction Effects

Next, I present select results of the models that included interaction effects for *gender X year* and *benefit type X year*. Here I rely on graphical depictions and textual descriptions of the results rather than tables of coefficients. This is because the magnitude and direction of coefficients, as well as significance levels, in nonlinear models with interaction terms are not substantively meaningful (Ai & Norton, 2003).

Qualifications mismatch. The probability of not working due to a qualifications mismatch was significantly lower for women than for men in 2004 ($\Delta = -.062$, $p < .001$), 2005 ($\Delta = -.049$, $p < .05$) and 2015 ($\Delta = -.078$, $p < .01$). The gender difference in probabilities was marginally significant in 2010 as well ($\Delta = -.05$, $p < .1$). The probability of reporting a qualifications mismatch did not significantly differ between 2004 and 2015 for men nor for women. However, as one may note in the graph, there were significant decreases between 2004 and 2010 for both men ($\Delta = -.075$, $p < .01$) and women ($\Delta = -.063$, $p < .01$). However, comparing the 2004-2010 changes in probabilities for men and women suggests that the trends that the two groups experienced were not significantly different (second difference: $\Delta_{\text{men}} - \Delta_{\text{women}} = .012$, $p = .69$).

This suggests that while there was a negative trend in reporting this barrier for both men and women, there was not a *gender difference* in the trend. For men, there was a subsequent increase in the probability of perceiving a qualifications mismatch between 2010 and 2015 by about 7 percentage points ($p < .05$). This may partly explain the overall nonsignificant difference in men's probabilities of reporting this barrier between 2004 and 2015. Although the probability of perceiving a qualifications mismatch did not significantly increase for women between 2010 and 2015, the point estimate of the probability was approximately 4 percentage points larger in 2015 compared to 2010 ($p = .128$).

[Figure 2 here]

There was a significant decrease in the probability of perceiving qualifications mismatch among SSI beneficiaries between 2004 and 2015, from .25 to .19 ($\Delta = -.06$, $p < .05$). There was neither an observed difference in the probability of reporting this barrier between 2004 and 2015 for SSDI nor for concurrent beneficiaries. In comparing the differences in probabilities over time for the three groups, I find that the change over time among SSI beneficiaries was significantly

different from the changes experienced by concurrent beneficiaries ($\Delta_{\text{SSI}} - \Delta_{\text{concurrent}} = -.08$, $p < .05$) and marginally different from the changes experienced by SSDI beneficiaries ($\Delta_{\text{SSI}} - \Delta_{\text{SSDI}} = -.055$, $p = .09$). This provides some evidence to suggest that improvements experienced by SSI beneficiaries over time were statistically different – and larger – than those experienced by the SSDI or concurrent beneficiaries.

It is misleading to conclude the perceived lack of qualifications did not change for SSDI beneficiaries, however. In fact, this barrier did decrease between 2004 and 2010 for SSDI beneficiaries as well as for SSI beneficiaries. In 2010, the probability of reporting this barrier was 8.4 percentage points lower than in 2004 for SSDI beneficiaries ($p < .01$) and 8.3 percentage points lower for SSI beneficiaries ($p < .001$). Yet, the 2004-2010 gains of SSDI beneficiaries were reversed between 2010 and 2015. In 2010, SSDI beneficiaries had a .18 predicted probability of not working due to lack of qualifications, while in 2015 the probability increased to .26 ($\Delta_{2015-2010} = 0.079$, $p < .01$). No such increase occurred for SSI beneficiaries between 2010 and 2015 ($\Delta_{2015-2010} = .02$, $p = .40$).

[Figure 3 here]

Unreliable transportation. There were no gender or benefit type differences in the change over time for reporting unreliable transportation as a barrier to work.

Caring for someone. There were no gender or benefit type differences in the change over time for reporting care responsibilities as a barrier to work.

No jobs of interest. Compared to men, women had a significantly lower probability of reporting that they could not find a job of interest in 2004 ($\Delta_{\text{women-men}} = -.03$, $p < .01$), 2005 ($\Delta_{\text{women-men}} = -.03$, $p < .05$), and 2015 ($\Delta_{\text{women-men}} = -.03$, $p < .05$). Comparing 2004 to 2014, there were neither significant changes in reports of this barrier for either men nor for women. However, in 2010, the probability of reporting no jobs of interest was about 5 percentage points less for men than it was in 2004 ($p < .001$). The 2004-2010 trend for men was significantly different from that experienced by women ($\Delta_{\text{men}} = -.045$; $\Delta_{\text{women}} = -.008$; second difference = .04, $p < .05$). In other words, between 2004 and 2010, there was a significant gender difference in the change over time in reports of not finding jobs of interest. Despite this improvement for men, there was a small increase in the probability of reporting no jobs of interest for between 2010 and 2015 (first difference: .03, $p = .11$). Though not significant, it was large enough to result in gender difference again in 2015 ($p < .05$).

[Figure 4 here]

There were differences by benefit type in the change in reporting no jobs of interest. Between 2004 and 2015, there were significant decreases in this barrier for concurrent beneficiaries and SSI beneficiaries but not among SSDI beneficiaries. In 2015, concurrent beneficiaries had a significantly lower probability of reporting not being able to find jobs of interest than similar concurrent beneficiaries in 2004 ($\Delta_{\text{concurrent}} = -.049$, $p < .01$). Similarly, among SSI beneficiaries, the probability of not finding jobs of interest was significantly lower in 2015

than in 2004 ($\Delta_{\text{SSI}} = -.031, p < .05$). There was a significant difference in the trend over time between SSDI and concurrent beneficiaries (second difference = .05, $p < .05$) but not between SSI and SSDI beneficiaries. This suggests that the change in perceiving a lack of jobs of interest over time was significantly greater for beneficiaries receiving both SSI and SSDI than for those only receiving SSDI.

[Figure 5 here]

Workplace inaccessibility. Women had significantly lower probabilities of reporting workplace accessibility barriers compared to men in 2004 ($\Delta = -.03, p < .05$), 2005 ($\Delta = -.05, p < .01$) and 2010 ($\Delta = -.07, p < .05$). Neither men nor women had significant changes in the probability of reporting accessibility barriers between 2004 and 2015. Between 2004 and 2010, however, there was a significant decrease in the probability of reporting accessibility barriers by about 5.5 percentage points *for women* ($p < .01$); the difference between the 2004-2010 change for men and for women, however, was not significant (second difference = $-.04, p = .25$). The improvement experienced by women with respect to accessibility between 2004 and 2010 was subsequently reversed. The probability of reporting accessibility barriers among women was 7 percentage points higher in 2015 than in 2010 ($p < .01$), though the second difference in the 2010-2015 change between men and women was not significant ($p = .33$).

[Figure 6 here]

Concurrent beneficiaries had a significantly lower probability of reporting accessibility barriers in 2004 compared to SSI ($\Delta = -.04, p < .05$) and SSDI beneficiaries ($\Delta = -.05, p < .01$). There were no group differences in predicted probabilities of reporting accessibility barriers during any of the subsequent survey rounds. However, there was evidence that reports of accessibility barriers *changed* in different ways depending on a respondent's benefit type. No overall changes were observed for any of the three groups between 2004 and 2015.

Between 2004 and 2010, there were marginally significant decreases in the predicted probabilities of accessibility barriers among SSDI ($\Delta = -.04, p = .055$) and SSI beneficiaries ($\Delta = -.06, p = .054$). There was no significant change in accessibility barriers among concurrent beneficiaries from 2004-2010. Notably, the difference in predicted probabilities between 2004-2010 among SSI beneficiaries was significantly different from the trend among concurrent beneficiaries across the same time period (second difference = 0.1, $p < .05$). The 2004-2010 trend among SSDI beneficiaries also differed from that of concurrent beneficiaries at a marginally significant level (second difference = .08, $p = .08$). This suggests that the changes in the probability of reporting accessibility barriers were significantly different between SSDI beneficiaries and, to a lesser extent SSI beneficiaries, compared to concurrent beneficiaries.

That there was a significant decrease in the probability of reporting accessibility barriers among SSI beneficiaries between 2004-2010 but not 2004-2015 can partly be explained by the differences in probabilities in 2010 and 2015. Between 2010 and 2015, the probability of reporting accessibility barriers increased among SSI beneficiaries by 8.2 percentage points ($p < .05$). SSDI beneficiaries reported a more modest, and nonsignificant, increase in accessibility barriers between 2010 and 2015 ($\Delta = .04, p = .12$).

[Figure 7 here]

Fear of losing benefits. There were no significant gender differences in the predicted probabilities of reporting a fear of losing benefits at each individual year. Between 2004 and 2015, there was a significant increase in the probability of women reporting a fear of losing benefits as a barrier to work by 4 percentage points ($p < .01$). Although men did not experience a significant change between 2004 and 2015, the change over time for men and women was not significantly different (second difference = .03, $p = .15$). One may notice what appears to be jump in the predicted probabilities between 2004 and 2006. In fact, the probability of reporting a fear of losing benefits as a barrier to work did significantly increase for both men ($\Delta = .04$, $p < .05$) and women ($\Delta = .05$, $p < .01$) between 2004 and 2006.

[Figure 8 here]

There were no differences in reporting a fear of losing benefits as a barrier to work by benefit type, nor were there significant changes over time.

Discouraged by previous job search attempts. There were no differences in reporting this barrier by gender or benefit type.

Others do not think the respondent can work. Compared to women, men were more likely to report that they were not working because others did not think they could work in 2005 ($\Delta = .04$, $p < .05$), 2006 ($\Delta = .08$, $p < .05$), and 2010 ($\Delta = .09$, $p < .01$). Between 2004 and 2015, there was neither a significant change in reporting this barrier for men nor for women. However, for women, there was a significant decrease in the probability of not working because others did not think they could work between 2004 ($pr_{2004} = .26$) and 2010 ($pr_{2010} = .20$; $\Delta = .06$, $p < .01$). There was no significant change for men between 2004 and 2010. Between 2004 and 2010, the change in reporting this barrier was significantly great for women than for men (second difference = $-.08$, $p < .05$). Though not significant, one may note that women experienced an approximately 4 percentage point increase in their probability of reporting this barrier between 2010 and 2015. This may provide a limited explanation for why women's 2004-2010 difference was significant, but the 2004-2015 difference was not.

[Figure 9 here]

SSI beneficiaries had a .048 lower predicted probability of not working because others did not think they could work in 2015 than in 2004 ($p < .05$). There were nonsignificant changes in the probabilities of reporting this barrier for SSDI and concurrent beneficiaries. The negative trend in the probability of reporting this barrier among SSI beneficiaries was different from the trend experienced by concurrent beneficiaries at a level that approached significance (second difference = $-.079$, $p = .05$). On the other hand, the second difference between the trend among SSI and SSDI beneficiaries was not significant.

[Figure 10 here]

Employers will not give the respondent a chance. In each individual year, women had a significantly lower probability of not working because employers would not give them a chance as compared to men ($\Delta_{2004} = -.049$, $p < .001$; $\Delta_{2005} = -.046$, $p < .01$; $\Delta_{2006} = -.045$, $p < .05$;

$\Delta_{2010} = -.064, p < .05$; $\Delta_{2015} = -.057, p < .05$). There was limited evidence that the probability of reporting this barrier changed over time for either group. Between 2004 and 2015, for both men and women, there were nonsignificant and small differences in the predicted probabilities. Yet, among women, the probability of not working because employers would not give them a chance was 4 percentage points less in 2010 than in 2004 ($p < .05$). However, the 2004-2010 change over time among women was not significantly different from the trend experienced by men (second difference = $-0.015, p = .62$). This suggests that although women reported significant gains between 2004 and 2010 with respect to feeling as if employers gave them a chance to work, there was not evidence of a gender difference in the change over time.

In 2015, the probability of not working due to feeling as if employers would not give one a chance was 5.7 percentage points higher among SSDI beneficiaries than SSI beneficiaries ($0.192 - 0.135 = 0.057, p < .05$). There were no other group differences in the other survey years. There was also no evidence that this barrier changed over time by benefit type.

Need for personal care assistance. There were no differences in the probability of reporting this barrier by gender or benefit type. There were also no changes over time.

Need for special equipment or devices. There was a 4.2 percentage point decrease in the probability of reporting an equipment/device barrier to work among men between 2010 and 2015 ($p < .05$). This trend for men was different at a marginally significant level from that which was experienced by women during the same years (second difference: $-.046, p = .08$). There were no differences by benefit type, or changes over time.

[Figure 11 here]

Discussion

In 1948, the General Assembly of the United Nations adopted resolution 217 A, the Universal Declaration of Human Rights, which recognized that “Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment” (United Nations General Assembly, 1948). Nearly sixty years later, the international community reaffirmed the fundamental right to employment for people with disabilities in the Convention on the Rights of Persons with Disabilities (CRPD; United Nations Treaty Series, 2006).⁷ Taken together, these statements from the United Nations specified work as a universal human right, inclusive of people with disabilities. In the United States, the Americans with Disabilities Act 1990 established a legal regime to address the civil rights of people with disabilities, and employment was placed at the center of the law. Nearly 30 years later, however, the unemployment rate among people with disabilities remains considerably higher than people without disabilities across every sociodemographic category.

In this report, I argue that in order to effectively address the employment needs of people with disabilities, it is important to understand the extent to which barriers to work have changed over time. The reasoning is straightforward. While researchers have investigated and identified barriers to work for people with disabilities, little attention has been paid to the fact that labor markets change, industries grow and decline, and the kinds of jobs that are available are hardly time invariant. Much of the previous research, perhaps due to limitations in data, has treated

⁷ Notably, the United States is one of 11 countries that have not ratified the treaty.

barriers to work as permanent features of the labor market experience of people with disabilities, seemingly disregarding that the economy is always in flux. This, though, is an empirical question which I attempt to address in this report. On the one hand, federal and state governments have invested considerable resources into improving the employment opportunities for people with disabilities, so one might expect that the barriers to work have declined over time. The gig economy has been promoted as providing greater access to employment for people with disabilities, so there may be economic reasons why the barriers to work have improved as well. On the other hand, greater concerns over cost and efficiency mean that employers may have less tolerance for hiring people with disabilities, who are viewed by some managers as requiring expensive accommodations. Funding for vocational rehabilitation programs is frequently cut only to be later renewed. Other exogenous macroeconomic factors, which are discussed above, may also have resulted in greater barriers to work. Designing interventions to effectively support the needs of people with disabilities requires an understanding of the current, or at least recent, challenges with respect to labor force participation.

The first set of analyses found evidence that there were, in fact, changes over time with respect to the barriers to work reported by unemployed SSDI and SSI beneficiaries. Specifically, beneficiaries had significantly different odds of reporting five of the barriers that were examined. However, the results indicated that beneficiaries were *more likely* to experience four of the five barriers for which there were observed changes. SSI and SSDI beneficiaries had higher odds of reporting a fear of losing benefits in 2010 and 2015 compared to 2004, the first year for which data is available. Beneficiaries were also more likely to report workplace inaccessibility as the reason for not working in 2015 compared to beneficiaries in 2005 and 2010. The odds of care responsibilities as a barrier to work were greater in 2015 compared to 2004. Beneficiaries in 2010 were also more likely to report that they could not work because they were caring for someone than in 2004 or 2005. The findings related to not being able to find a job for which one was qualified, what I call qualification mismatch, are intriguing. There is evidence that the odds of reporting this barrier were lower in 2010 relative to the three preceding survey years – 2004, 2005, and 2006. Yet, between 2010 and 2015, beneficiaries became more likely to report a qualifications mismatch as a reason for not working, reversing the trend of the preceding seven years. The one barrier that beneficiaries became *less likely* to experience was not being able to find a job of interest. In both 2010 and 2015, SSDI and SSI beneficiaries were significantly less likely to report that they were unemployed because they could not find a job that they wanted.

It is concerning, in particular, that beneficiaries became *more likely* to report qualifications mismatch and inaccessible workplaces in 2015 compared to earlier years. These findings warrant the attention of policy researchers and officials. First, one can interpret the qualifications mismatch in two ways. While it may be the case that people with disabilities with lower levels of education and work experience are unable to find jobs that meet their *limited qualifications*, Kaye (2009) makes the argument that workers with disabilities are often funneled to entry-level jobs *below their skill level*. This finding suggests that emphasis is needed, perhaps among vocational rehabilitation specialists, in matching people with disabilities to jobs that are not only available, but that also reflect their skills, talents, and experience, whatever they may be. The fact that people with disabilities are more likely to perceive workplaces as inaccessible in 2015 than previous years is troubling. More research is needed to understand the factors that are driving this difference, especially because workplace accessibility is explicitly identified by the ADA, and is covered by the law's civil rights protections.

Referring to Figure 1, one notes that these two barriers – qualifications mismatch and inaccessible workplaces – rank as the third and fourth most frequently cited reasons for not working. Although the odds of not being able to find a job of interest declined over time, this barrier was reported by only around 10% of beneficiaries. It is also worth noting several barriers to work did not change over time. The likelihood of feeling discouraged by previous job searches, the second most commonly cited barrier, was reported by 25-30% of respondents across all rounds of the survey. This implies that greater attention is needed not only in helping unemployed people with disabilities overcome visible or structural barriers to work. It is also important to understand how previous experiences shape the outlooks of people with disabilities regarding their willingness to look for work. Finally, the barriers that are most related to stigma, that employers will not give the respondent a chance and that others do not think the respondent can work, also did not change in either direction. This result underscores the need for efforts to address broader cultural perceptions of people with disabilities, and to generate awareness of the potential benefits that they can bring to a workplace. The results related to gender and benefit type differences in barriers to work are discussed in depth above. What is worth emphasizing here is the need to consider the heterogeneity of people with disabilities. While many of the barriers changed over time, some of them changed differently for men and women and for people receiving different benefits.

Several policy implications emerge from this study's results. As described earlier, most vocational interventions focus on supply side barriers. The findings suggest that greater attention is needed from policymakers in addressing demand side barriers, especially those barriers that appear to have increased over time. For instance, occupational rehabilitation and work incentive programs may not adequately produce desired outcomes if people with disabilities continue to experience inaccessible workplaces. Similarly, individuals may be willing to try to work, but if their qualifications are incompatible with job openings they are unlikely to be successful. It is also important for policymakers and advocates to address stereotypes that may be preventing many people with disabilities from working. Research has found that there are several benefits to hiring people with disabilities (Lindsay, Cagliostro, Albarico, Mortaji, & Karon, 2018) and the Department of Labor and Internal Revenue Service offer several incentive programs encouraging employers to do so (U.S. Department of Labor, n.d.). These resources should be broadly disseminated, but access to this information alone may not combat biased attitudes. The fact that one-third of respondents reported that employers will not give them a chance or that "others" do not think they can work suggests a greater need for strategies to expand cultural awareness of disability.

Legislators and agency officials should also consider whether federal agencies are receiving sufficient support to promote employment of people with disabilities. For example, there has been a recent reduction in grants to several state vocational rehabilitation agencies (United States Department of Education, Rehabilitation Services Administration, 2018). The 2019 budget request from the Department of Labor's Office of Disability Employment Policy reflects an \$11 million decrease from the previous year's appropriation (Office of Disability Employment Policy, 2018). Staffing levels for the Equal Employment Opportunity Commission declined by 5% in FY 2017 (U.S. Equal Employment Opportunity Commission, 2018). Changes such as these may have downstream effects on both the availability of employment services as well as agencies' abilities to enforce antidiscrimination laws.

There are several limitations noting. First, although each survey was nationally representative, the samples are cross-sectional and included different people at each round.

While changes over time were identified, these changes refer to beneficiaries as a group, not of individuals. Future research should consider collecting longitudinal data on people with disabilities to better understand the extent to which changes over time in barriers to the labor market are experienced at an individual level. Relatedly, because the data are cross-sectional, all of the relationships that I have identified can only be discussed as associations. I am unable to infer causality. In addition, while I propose several reasons *why* barriers may have changed, I am unable to assess whether the results actually relate to the exogenous economic factors or changes in the policy environment. The data was collected in large intervals, so unlike monthly economic time series data, identifying associations between observed trends and broader contextual forces is not possible. Another limitation relates to the barriers to work. These are perceptions provided by beneficiaries and do not necessarily correspond to objective labor market conditions. With self-reported data, I rely on the beneficiaries' points of view, but am unable to corroborate whether what they have described accurately portray their experiences.

People with disabilities continue to experience levels of unemployment that could not have been foreseen by the authors of the ADA. It is incumbent upon researchers to continue examining the reasons why people with disabilities experience such difficulty entering or re-entering the labor force. The findings of this study suggest that we may have taken some steps backward in addressing certain barriers to work. Evidence from this analysis can contribute to efforts by researchers and policymakers to develop more targeted strategies to ensure that people with disabilities experience equal economic opportunities, to which they are entitled.

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TABLES AND FIGURES

Table 1. Sample Sizes, Response Rates, and Interview Completions for NBS Rounds 1-5

Round	Year	Sample Size	Response Rate	Completed Interviews
1	2004	9,064	77.5%	6,520
2	2005	6,712	78.5%	4,864
3	2006	3,382	81.1%	2,508
4	2010	3,683	72.5%	2,298
5	2015	7,682	62.6%	4,068

Source: National Beneficiary Survey (NBS) Rounds 1-5

Table 2. NBS Variables included in the Analysis

Dependent Variables: Barriers to Work	Independent Variables
<ul style="list-style-type: none"> • Health limitations • Qualification mismatch • Unreliable transportation • Care responsibilities • No jobs of interest • Finishing school or training • Workplace inaccessibility • Will lose benefits • Discouraging job searches • Others do not think can work • Employers will not give a chance • Job market is bad • Lack of skills • Needs special equipment or devices • Needs personal care assistance 	<ul style="list-style-type: none"> • Survey years • Gender • Ethnicity • Age • Educational social capital • Marital status • Living arrangement • Residence • Income and poverty • Received government aid • Educational social capital • Work-oriented • Ever worked for pay • Received employment services • Unmet service needs • Proxy • Age of disability onset • ADL and IADLs • Diagnosis category • Self-rated health • Benefit type • Benefit amount • Months since entitlement

Source: National Beneficiary Survey (NBS) Rounds 1-5

Table 3. Sociodemographic Characteristics of SSI and DI¹ Beneficiaries, by Year (Weighted, N= 39,094,132)

	2004	2005	2006	2010	2015	Pairwise difference ²
Female (%)	51.4	51.0	52.7	50.5	52.3	
Non-white (%)	70.7	70.7	68.6	70.0	69.5	
Age (%)						a, b, c
18-25y	5.4	5.3	5.1	4.6	4.2	
26-40y	17.1	16.2	14.7	13.8	13.4	
41-55y	40.0	39.5	37.8	35.4	33.1	
56y+	37.5	39.1	42.5	46.3	49.3	
Education ³ (%)						a, b, c
Less than HS	36.1	33.5	35.5	33.3	28.1	
HS or equivalent	39.1	39.4	37.4	38.7	41.3	
Some college	17.4	19.0	19.0	21.6	22.8	
BA or more	7.4	8.1	8.0	6.3	7.7	
Married (%)	33.9	31.9	33.2	33.3	30.9	
Lives with relatives or spouse (%)	65.5	64.4	66.2	65.0	65.8	
Lives in residential facility (%)	4.0	4.9	4.4	4.0	3.2	
Poverty level (%)						
Under 100%	49.4	46.8	49.7	47.5	48.6	
100-199%	27.6	30.9	29.1	32.3	30.1	
200-399%	15.4	15.7	15.4	14.2	14.4	
400+%	7.6	6.6	5.8	6.0	6.9	
Work-oriented (%)	25.4	27.2	22.6	20.9	25.5	d
Ever worked for pay (%)	87.0	86.8	88.0	82.2	82.8	a, b, c

Note: 1. Includes beneficiaries with concurrent SSI and SSDI. 2. Significant differences ($p < .05$) with 2015 as the reference: a. [2004,2015]; b. [2005,2015]; c. [2006,2015]; d. [2010,2015]. Chi-squared tests (categorical variables) and adjusted Wald tests (continuous variables). 3. Educational attainment of the respondent or, if aged 18-25 years old, of the respondent's mother or father, whichever higher.

Table 4. Health, Services, and Program Characteristics of SSI and DI¹ Beneficiaries, by Year (weighted, N= 39,094,132)

	2004	2005	2006	2010	2015	Pairwise difference ²
Beneficiary Status (%)						a, b
SSI	32.2	31.3	29.4	28.7	27.9	
SSDI	51.2	52.1	54.3	54.5	57.6	
Both SSI	16.7	16.7	16.3	16.8	14.5	
Proxy interview (%)	19.6	18.9	18.0	18.2	16.6	a
Child onset of disability ³ (%)	19.8	20.5	20.5	18.9	17.9	b, c
ADL limitations (M) ⁴	3.23	3.26	3.43	3.43	3.43	a, b
IADL limitations (M)	2.4	2.5	2.5		2.5	
SSA diagnosis group (%)						a, b, c
Mental illness	18.9	20.4	18.9	18.2	21.5	
Cognitive disability	5.9	6.0	4.2	4.7	4.3	
Muscular/skeletal	19.7	20.6	20.6	23.8	24.5	
Sensory disorder	2.9	3.2	2.6	3.3	2.8	
Other condition	52.7	49.8	53.7	50.0	46.9	
Self-rated health (%)						
Very poor/poor	45.4	45.8	48.1	45.3	43.8	
Fair/good	46.2	46.8	44.9	47.1	48.2	
Very good/excellent	8.4	7.4	7.1	7.6	8.0	
Social Security benefits ⁵ (M, \$)	781.79	798.09	816.72	903.70	1084.60	a, b, c, d
Months since initial benefits award (M)	146.7	145.8	145.1	168.6	145.5	d
Received employment services (%)	29.4%	32.9%	31.8%	33.2%	31.9%	
Unmet service or support needs (%)	10.5%	11.4%	7.4%	11.0%	9.8%	c
Received government aid ⁶ (%)	31.3%	30.0%	34.5%	40.5%	42.2%	a, b, c

Note: 1. Includes beneficiaries with concurrent SSI and SSDI. 2. Significant pairwise differences ($p < .05$) with 2015 as the reference: a. [2004,2015]; b. [2005,2015]; c. [2006,2015]; d. [2010,2015]. Chi-squared tests for categorical variables and Adjusted Wald tests for continuous variables. 3. Child onset refers to diagnosis before 18 years of age; 4. The distribution of ADL limitations is positively skewed. An (unweighted) nonparametric equality of medians test indicated consistent results to the adjusted Wald test; 5. Amount received in the previous month; 6. Cash or non-cash -assistance other than Social Security, such as Veterans Benefits or SNAP.

Table 5. Barriers to Work Reported by Unemployed SSI and DI¹ Beneficiaries by Year (weighted, N= 39,094,132)

	2004	2005	2006	2010	2015	Pairwise difference ²
Perceived employment barriers (%)						
Health limitations	95.4	94.8	95.8	96.0	95.9	b
Qualifications mismatch	27.2	26.0	25.2	20.0	24.3	d
Unreliable transportation	17.4	18.2	17.0	15.6	17.0	
Caring for someone	5.7	6.2	6.7	8.9	8.2	a, b
Can't find a job of interest	12.7	11.0	10.9	9.2	10.4	a
Finishing school/training	3.9	3.7	3.5	3.3	3.0	
Workplaces not accessible	28.3	25.7	25.9	24.4	28.4	
Would lose benefits	11.2	11.9	15.4	13.9	13.5	
Discouraged by previous attempts	29.5	30.3	29.3	26.4	28.0	
Others do not think can work	26.7	27.0	27.2	24.7	24.9	
Employers will not give a chance	18.9	17.1	14.9	15.7	17.8	
Bad job market	0.19	0.11	0.08	0.16	0.22	
Lacks skills	0.73	0.78	0.79	0.44	0.90	
Needs personal care assistance ³	-	-	9.0	10.9	10.6	
Needs equipment or devices ³	-	-	10.0	11.7	9.3	

Note: 1. Includes beneficiaries with concurrent SSI and SSDI. 2. Significant pairwise differences based on chi-squared tests ($p < .05$) with 2015 as the reference: a. [2004, 2015]; b. [2005, 2015]; c. [2006, 2015]; d. [2010, 2015]. 3. Not asked in 2004 or 2005 surveys.

Table 6. Barriers to Work Reported by Unemployed Disability Beneficiaries, by Benefit Type (weighted, N= 39,094,132)

	SSI	SSDI	Concurrent	Pairwise difference ¹
Perceived employment barriers (%)				
Health limitations	93.9	96.7	95.0	a, b
Qualifications mismatch	26.9	21.4	28.8	a, b,
Unreliable transportation	23.9	12.4	19.6	a, b, c
Caring for someone	9.8	5.8	7.7	a, b, c
Can't find a job of interest	13.2	8.9	12.2	a, b
Finishing school/training	6.0	1.7	5.0	a, b
Workplaces not accessible	30.2	23.7	29.0	a, b
Would lose benefits	15.0	11.4	16.3	a, b
Discouraged by previous attempts	29.6	27.4	30.8	b
Others do not think can work	25.5	25.8	27.5	
Employers will not give a chance	19.2	15.0	19.0	a, b
Bad job market	0.2	0.2	0.2	
Lacks skills	1.0	0.5	0.9	
Needs personal care assistance ²	12.8	8.8	10.7	a
Needs equipment or devices ²	13.6	8.3	11.7	a, b

1. Significant pairwise differences based on chi-squared tests ($p < .05$): a. SSI vs. SSDI; b. Concurrent vs. SSDI; c. Concurrent vs. SSI; 2. Not asked in 2004 or 2005 surveys.

Table 7. Barriers to Work Reported by Unemployed Disability Beneficiaries, by Gender (weighted, N= 39,094,132)

	Men	Women
Perceived employment barriers (%)		
Health limitations	95.2	96.0
Qualifications mismatch	27.5	21.2*
Unreliable transportation	16.1	17.8
Caring for someone	5.1	9.4*
Can't find a job of interest	12.0	9.6*
Finishing school	3.3	3.6
Workplaces not accessible	28.2	24.9*
Would lose benefits	13.3	13.2
Discouraged by previous attempts	28.4	28.8
Others do not think can work	28.2	23.8*
Employers will not give a chance	19.5	14.4*
Bad job market	0.2	0.0*
Lacks skills	0.6	0.8
Needs personal care assistance ¹	10.7	9.9
Needs equipment or devices ¹	10.7	10.0

* p<.05, Indicating significant pairwise difference based on chi-squared test

Note: 1. Not asked in 2004 or 2005 surveys.

Table 8. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries (2015 as reference)¹

	Health limitation	Qualifications Mismatch	Unreliable transportation	Caring for someone
Year²				
2004	1.13 (0.16)	1.10 (0.11)	0.85 (0.08)	0.75* (0.11)
2005	0.94 (0.14)	1.00 (0.10)	0.90 (0.09)	0.82 (0.12)
2006	1.09 (0.21)	1.04 (0.12)	0.91 (0.12)	0.94 (0.15)
2010	1.06 (0.21)	0.74* (0.09)	0.83 (0.11)	1.23 (0.19)
Female ³	1.01 (0.11)	0.73*** (0.04)	1.03 (0.08)	1.86*** (0.22)
White ⁴	1.19 (0.15)	1.06 (0.07)	0.94 (0.07)	1.05 (0.10)
Age⁵				
26-40	1.47** (0.19)	0.89 (0.07)	1.03 (0.08)	1.49** (0.19)
41-55	2.05*** (0.40)	0.82 (0.09)	1.10 (0.12)	0.96 (0.16)
55+	1.37 (0.34)	0.75* (0.09)	0.89 (0.12)	0.80 (0.17)
Education⁶				
HS or equivalent	0.82 (0.12)	0.90 (0.07)	0.95 (0.08)	1.01 (0.13)
Some college	1.07 (0.17)	0.83 (0.09)	0.77* (0.09)	1.03 (0.16)
BA or more	0.76 (0.20)	0.76 (0.11)	0.64* (0.11)	0.74 (0.17)
Married	1.26 (0.23)	0.82* (0.06)	0.68*** (0.07)	1.27 (0.17)
Lives with spouse or relatives	1.04 (0.15)	0.87 (0.07)	0.86 (0.08)	4.46*** (0.62)

Lives in residential facility	0.68 (0.27)	1.16 (0.18)	0.80 (0.15)	0.30* (0.16)
Federal poverty level ⁷				
100-199%	1.18 (0.20)	1.13 (0.09)	0.94 (0.08)	0.97 (0.12)
200-399%	1.08 (0.20)	1.15 (0.13)	0.85 (0.11)	0.57** (0.11)
400%+	0.85 (0.29)	1.06 (0.16)	0.79 (0.17)	0.46* (0.16)
Work-oriented	0.40*** (0.04)	1.84*** (0.13)	1.92*** (0.15)	1.80*** (0.22)
Ever worked	0.93 (0.12)	1.04 (0.09)	1.13 (0.11)	0.95 (0.13)
Benefit type ⁸				
SSDI	0.75 (0.13)	1.14 (0.11)	0.85 (0.10)	0.63** (0.11)
SSI & SSDI	0.95 (0.12)	1.14 (0.09)	0.81** (0.07)	0.72** (0.09)
Proxy interview	1.87*** (0.32)	1.22* (0.11)	0.80* (0.08)	0.25*** (0.04)
Child disability onset ⁹	2.07*** (0.34)	0.65*** (0.06)	0.81* (0.08)	0.93 (0.13)
ADLs	1.16** (0.06)	0.95* (0.02)	0.99 (0.02)	1.01 (0.03)
IADLs	1.29*** (0.08)	1.03 (0.03)	1.02 (0.04)	0.82*** (0.04)
Diagnosis group ¹⁰				
Cognitive	0.64* (0.14)	1.31* (0.14)	0.88 (0.11)	1.00 (0.21)
Musculoskeletal	0.66 (0.18)	0.99 (0.10)	0.78 (0.10)	0.84 (0.16)

Sensory	0.36*** (0.09)	1.08 (0.18)	1.65** (0.31)	1.22 (0.25)
Other	0.43*** (0.06)	0.93 (0.08)	0.88 (0.08)	0.71** (0.09)
Self-rated health ¹¹				
Fair/good	0.44*** (0.08)	1.02 (0.07)	1.22* (0.10)	1.06 (0.12)
Very good/ Excellent	0.25*** (0.05)	1.05 (0.11)	1.26 (0.16)	1.10 (0.23)
Benefits amount ¹² (100s)	1.05 (0.02)	1.00 (0.01)	0.95*** (0.01)	1.05* (0.02)
Months since initial eligibility (10s)	1.00 (0.01)	1.01** (0.00)	1.01** (0.00)	1.01 (0.01)
Received employment services	1.34* (0.15)	1.01 (0.08)	0.90 (0.07)	1.10 (0.13)
Unmet service needs	1.01 (0.19)	1.40*** (0.12)	1.71*** (0.16)	1.44* (0.22)
Public assistance ¹³	1.12 (0.15)	1.02 (0.07)	0.89 (0.07)	1.43** (0.17)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2015 is the reference. 3. Male is the reference category. 4. Non-white is the reference. 5. 18-25 years is the reference. 6. Less than high school is the reference. 7. Less than 100% FPL is the reference. 8. SSI (only) is the reference. 9. Onset before 18 years of age. Adult onset is the reference. 10. Mental illness is the reference. 11. Poor/very poor is the reference. 12. The amount in Social Security benefits received last month. 13. Refers to non-Social Security assistance, such as Veterans Benefits or SNAP.

Table 9. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries (2010 as reference)¹

	Health limitation	Qualifications mismatch	Unreliable transportation	Caring for someone
Year ²				
2004	1.07 (0.22)	1.48*** (0.16)	1.03 (0.12)	0.61** (0.09)
2005	0.89 (0.17)	1.35** (0.15)	1.08 (0.13)	0.67** (0.10)
2006	1.03 (0.26)	1.40** (0.16)	1.09 (0.15)	0.76 (0.14)
2015	0.94 (0.19)	1.34* (0.16)	1.21 (0.16)	0.81 (0.12)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: 1. Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2010 is the reference.

Table 10. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries, Continued (2015 as reference)¹

	No jobs of interest	Finishing school	Workplaces not accessible	Fear lose benefits
Year²				
2004	1.26* (0.15)	1.32 (0.22)	0.92 (0.09)	0.76* (0.09)
2005	1.02 (0.14)	1.14 (0.20)	0.79* (0.08)	0.79 (0.10)
2006	1.14 (0.17)	1.22 (0.26)	0.83 (0.09)	1.15 (0.16)
2010	0.90 (0.15)	1.24 (0.24)	0.77* (0.09)	0.98 (0.15)
Female³				
	0.77** (0.07)	1.13 (0.13)	0.79*** (0.05)	0.92 (0.07)
White⁴				
	0.86 (0.07)	0.65*** (0.07)	0.80** (0.06)	1.18 (0.11)
Age⁵				
26-40	1.05 (-0.11)	0.44*** (0.05)	1.11 (0.09)	1.22* (0.12)
41-55	0.93 (0.13)	0.27*** (0.05)	1.01 (0.11)	1.10 (0.14)
55+	1.13 (0.21)	0.19*** (0.06)	0.99 (0.12)	0.98 (0.16)
Education⁶				
HS or equivalent	1.04 (0.11)	1.10 (0.18)	0.91 (0.07)	1.03 (0.09)
Some college	0.89 (0.12)	2.24*** (0.38)	0.80* (0.08)	1.06 (0.12)
BA or more	1.10 (0.17)	1.47* (0.28)	0.77 (0.11)	1.00 (0.17)
Married	0.70** (0.08)	0.80 (0.16)	1.00 (0.09)	0.76* (0.09)
Lives with spouse or relatives	0.91 (0.09)	1.05 (0.15)	0.92 (0.07)	0.94 (0.10)

Lives in residential facility	1.07 (0.21)	1.64 (0.42)	0.82 (0.12)	1.20 (0.27)
Federal poverty level ⁷				
100-199%	0.85 (0.09)	0.84 (0.14)	0.91 (0.08)	0.81* (0.08)
200-399%	1.07 (0.15)	0.73 (0.14)	0.85 (0.09)	0.82 (0.12)
400%+	0.70 (0.16)	1.21 (0.30)	0.86 (0.14)	0.84 (0.21)
Work-oriented	2.98*** (0.31)	7.50*** (1.06)	1.39*** (0.10)	1.16 (0.10)
Ever worked	0.97 (0.13)	0.82 (0.11)	1.09 (0.10)	0.92 (0.12)
Benefit type ⁸				
SSDI	1.06 (0.14)	0.68* (0.12)	1.03 (0.09)	1.04 (0.14)
SSI & SSDI	0.93 (0.10)	1.02 (0.15)	0.98 (0.07)	1.11 (0.11)
Proxy interview	0.57*** (0.07)	1.09 (0.17)	1.20 (0.11)	0.29*** (0.04)
Child disability onset ⁹	0.75* (0.08)	0.69 (0.14)	0.88 (0.08)	0.89 (0.10)
ADLs	0.95 (0.03)	1.01 (0.05)	0.98 (0.02)	0.91** (0.03)
IADLs	0.95 (0.04)	0.96 (0.06)	1.10** (0.04)	0.95 (0.04)
Diagnosis group ¹⁰				
Cognitive	1.00 (0.18)	0.62** (0.10)	0.82 (0.09)	0.92 (0.14)
Musculoskeletal	1.03 (0.17)	1.04 (0.24)	0.70*** (0.07)	0.89 (0.14)

Sensory	1.58* (0.35)	0.91 (0.17)	1.60* (0.33)	1.14 (0.26)
Other	1.06 (0.11)	0.79 (0.12)	0.83* (0.07)	1.02 (0.10)
Self-rated health ¹¹				
Fair/good	1.46*** (0.14)	1.51** (0.24)	0.96 (0.07)	1.23* (0.10)
Very good/ Excellent	1.90*** (0.28)	2.17*** (0.43)	0.80* (0.08)	1.36* (0.17)
Benefits amount ¹² (100s)	0.99 (0.02)	1.01 (0.02)	0.98** (0.01)	0.98 (0.01)
Months since initial eligibility (10s)	1.01* (0.00)	0.99 (0.01)	1.00 (0.00)	1.01** (0.00)
Received employment services	1.04 (0.10)	1.70*** (0.22)	1.16* (0.08)	1.07 (0.10)
Unmet service needs	1.70*** (0.19)	1.36* (0.19)	1.57*** (0.14)	1.38* (0.20)
Public assistance ¹³	1.02 (0.10)	1.19 (0.16)	1.09 (0.07)	1.00 (0.08)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2015 is the reference. 3. Male is the reference category. 4. Non-white is the reference. 5. 18-25 years is the reference. 6. Less than high school is the reference. 7. Less than 100% FPL is the reference. 8. SSI (only) is the reference. 9. Onset before 18 years of age. Adult onset is the reference. 10. Mental illness is the reference. 11. Poor/very poor is the reference. 12. The amount in Social Security benefits received last month. 13. Refers to non-Social Security assistance, such as Veterans Benefits or SNAP.

Table 11. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries, Continued (2010 as reference)¹

	No jobs of interest	Finishing school	Workplaces not accessible	Fear lose benefits
Year ²				
2004	1.41** (0.18)	1.06 (0.19)	1.19 (0.12)	0.77* (0.09)
2005	1.14 (0.16)	0.92 (0.17)	1.02 (0.10)	0.81 (0.12)
2006	1.27 (0.19)	0.99 (0.20)	1.08 (0.11)	1.17 (0.18)
2015	1.11 (0.18)	0.81 (0.15)	1.29* (0.14)	1.02 (0.15)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: 1. Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2010 is the reference.

Table 12. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries, Continued (2015 as reference)¹

	Previous attempts discouraging	Others do not think can work	Employers will not give chance	Needs personal care assist.	Needs equipment or devices
Year ²					
2004	1.01 (0.10)	1.07 (0.10)	1.04 (0.11)	-	-
2005	1.01 (0.11)	1.07 (0.10)	0.89 (0.09)	-	-
2006	1.03 (0.12)	1.10 (0.11)	0.80 (0.11)	0.87 (0.14)	1.02 (0.19)
2010	0.90 (0.10)	0.96 (0.11)	0.82 (0.11)	1.02 (0.15)	1.19 (0.20)
Female ³	0.93 (0.06)	0.79 ^{***} (0.05)	0.67 ^{***} (0.05)	0.78 (0.10)	0.79 (0.10)
White ⁴	1.13 (0.09)	0.96 (0.06)	0.91 (0.08)	0.70 ^{**} (0.09)	0.68 ^{**} (0.10)
Age ⁵					
26-40	1.52 ^{***} (0.13)	1.28 ^{**} (0.11)	1.00 (0.10)	0.65 [*] (0.12)	1.04 (0.19)
41-55	1.48 ^{***} (0.17)	1.37 ^{**} (0.14)	0.97 (0.12)	0.78 (0.17)	1.19 (0.27)
55+	1.21 (0.16)	1.34 [*] (0.18)	0.99 (0.16)	0.54 [*] (0.15)	1.21 (0.34)
Education ⁶					
HS or equivalent	1.12 (0.08)	1.09 (0.09)	1.06 (0.10)	0.65 [*] (0.11)	0.83 (0.13)
Some college	1.08 (0.10)	0.92 (0.09)	0.85 (0.10)	0.66 [*] (0.14)	0.99 (0.19)
BA or more	1.24 (0.16)	1.14 (0.13)	0.94 (0.13)	0.42 ^{**} (0.12)	0.98 (0.31)
Married	0.98 (0.09)	0.90 (0.09)	0.90 (0.09)	1.06 (0.20)	0.99 (0.18)
Lives with spouse	0.94	0.93	0.89	0.69 [*]	0.81

or relatives	(0.08)	(0.08)	(0.09)	(0.11)	(0.14)
Lives in residential facility	0.73* (0.12)	0.96 (0.13)	0.94 (0.16)	0.75 (0.25)	0.72 (0.24)
Federal poverty level ⁷					
100-199%	1.10 (0.08)	1.14 (0.10)	0.88 (0.08)	0.83 (0.15)	0.89 (0.14)
200-399%	1.04 (0.10)	1.14 (0.10)	1.03 (0.13)	0.82 (0.19)	0.83 (0.20)
400%+	1.02 (0.17)	1.00 (0.14)	0.71 (0.13)	1.22 (0.44)	0.82 (0.28)
Work-oriented	1.74*** (0.12)	1.17* (0.09)	2.07*** (0.17)	1.88*** (0.27)	1.35 (0.22)
Ever worked	1.83*** (0.17)	1.01 (0.10)	1.02 (0.12)	0.72 (0.13)	0.87 (0.15)
Benefit type ⁸					
SSDI	1.09 (0.10)	1.16 (0.10)	1.19* (0.11)	0.96 (0.18)	0.80 (0.14)
SSI & SSDI	0.97 (0.08)	1.10 (0.09)	1.00 (0.09)	0.84 (0.16)	0.85 (0.15)
Proxy interview	0.62*** (0.05)	1.07 (0.10)	0.98 (0.10)	0.92 (0.18)	0.57** (0.12)
Child disability onset ⁹	0.60*** (0.06)	0.83 (0.08)	0.79* (0.08)	1.42 (0.29)	1.09 (0.20)
ADLs	1.00 (0.02)	1.01 (0.02)	1.00 (0.02)	1.15** (0.05)	1.03 (0.04)
IADLs	0.93* (0.03)	0.97 (0.03)	0.97 (0.03)	1.16* (0.08)	1.17* (0.08)
Diagnosis group ¹⁰					
Cognitive	0.70** (0.08)	0.79 (0.10)	0.85 (0.12)	0.39** (0.13)	0.89 (0.31)
Musculoskeletal	0.57*** (0.05)	0.57*** (0.07)	0.65** (0.08)	0.49*** (0.10)	0.77 (0.19)

Sensory	0.66* (0.13)	0.95 (0.18)	1.32 (0.28)	1.26 (0.50)	4.03*** (1.34)
Other	0.61*** (0.05)	0.74*** (0.07)	0.83* (0.07)	0.54*** (0.08)	1.33 (0.22)
Self-rated health ¹¹					
Fair/good	0.94 (0.07)	0.80** (0.06)	1.02 (0.09)	0.96 (0.13)	1.08 (0.16)
Very good/ Excellent	0.70** (0.08)	0.60*** (0.07)	0.91 (0.11)	0.87 (0.26)	1.29 (0.33)
Benefits amount ¹² (100s)	0.98 (0.01)	0.99 (0.01)	0.98 (0.01)	1.00 (0.02)	0.96 (0.02)
Months since initial eligibility (10s)	1.01** (0.00)	1.01 (0.00)	1.02*** (0.00)	1.02* (0.01)	1.02** (0.01)
Received employment services	1.32*** (0.09)	1.18* (0.08)	1.16 (0.09)	1.10 (0.17)	1.15 (0.18)
Unmet service needs	1.58*** (0.13)	1.22* (0.11)	1.79*** (0.15)	1.83*** (0.29)	1.94*** (0.37)
Public assistance ¹³	1.19* (0.09)	1.04 (0.07)	1.10 (0.08)	1.01 (0.14)	1.00 (0.15)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: 1. Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2015 is the reference. Need for personal care and equipment/devices were not asked in 2004 or 2005 3. Male is the reference category. 4. Non-white is the reference. 5. 18-25 years is the reference. 6. Less than high school is the reference. 7. Less than 100% FPL is the reference. 8. SSI (only) is the reference. 9. Onset before 18 years of age. Adult onset is the reference. 10. Mental illness is the reference. 11. Poor/very poor is the reference. 12. The amount in Social Security benefits received last month. 13. Refers to non-Social Security assistance, such as Veterans Benefits or SNAP.

Table 13. Adjusted Odds of Experiencing Employment Barriers among SSI, SSDI, and Concurrent Beneficiaries (2010 as reference)¹

	Previous attempts discouraging	Others do not think can work	Employers will not give chance	Needs personal care assist.	Needs equipment or devices
Year ²					
2004	1.12 (0.10)	1.12 (0.10)	1.27 (0.16)	-	-
2005	1.13 (0.10)	1.12 (0.11)	1.08 (0.13)	-	-
2006	1.14 (0.13)	1.15 (0.12)	0.98 (0.13)	0.85 (0.16)	0.86 (0.15)
2015	1.11 (0.13)	1.04 (0.11)	1.22 (0.17)	0.98 (0.15)	0.84 (0.14)

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes: 1. Odds ratios presented. Taylor linearized standard errors in parentheses. 2. 2010 is the reference.

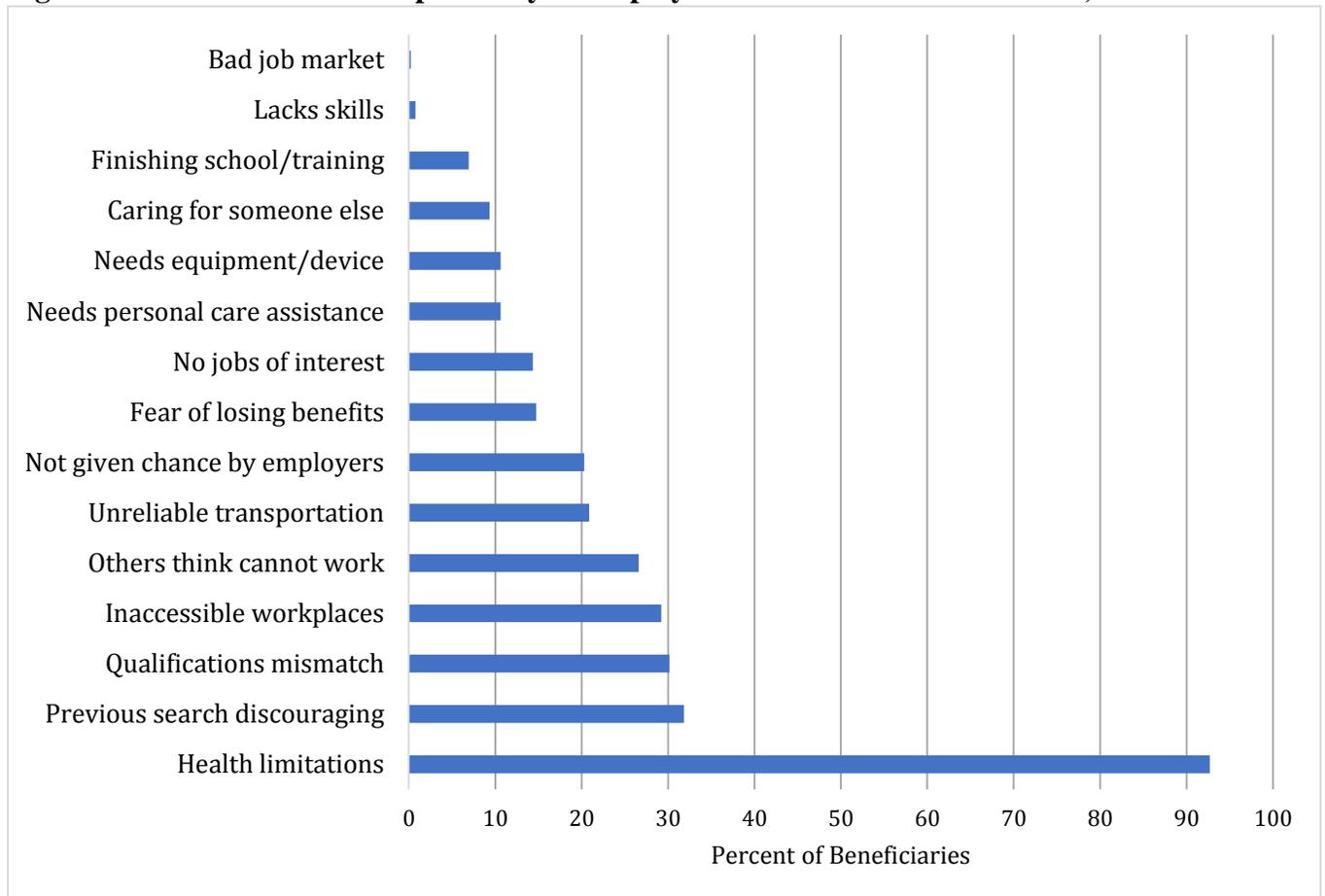
Figure 1. Barriers to Work Reported by Unemployed SSI and SSDI Beneficiaries, 2004-2015

Figure 2. Probabilities of Reporting Qualification Mismatch, by Gender (2004-2015)

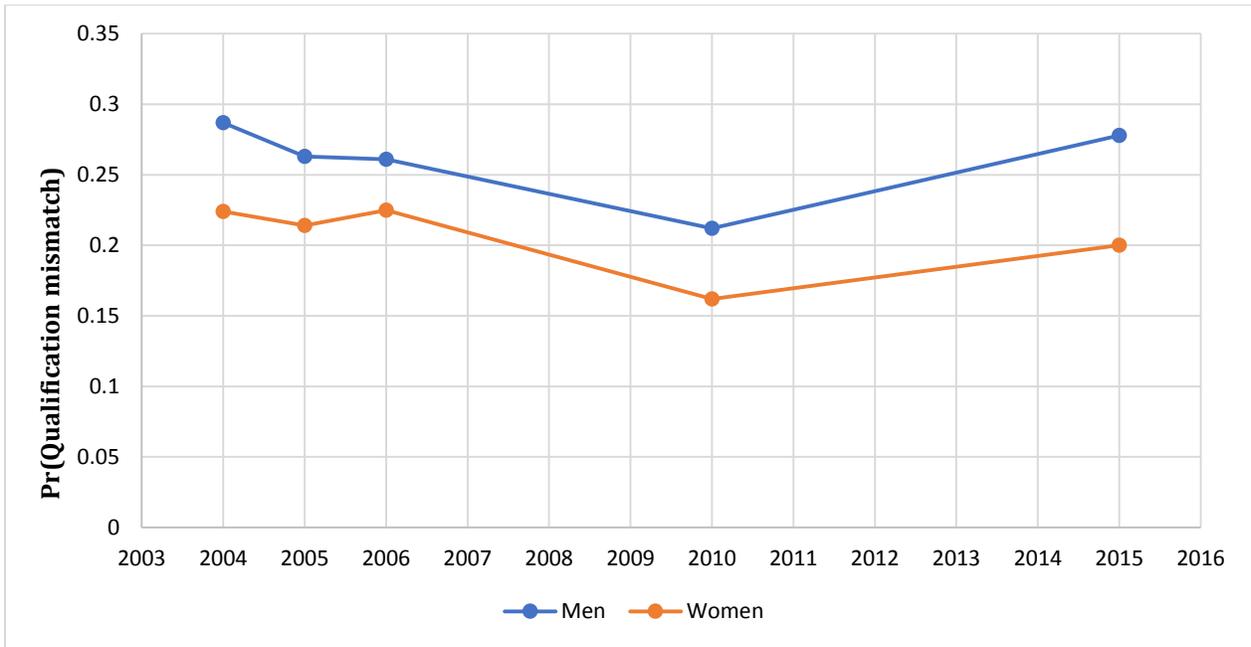


Figure 3. Probabilities of Reporting Qualification Mismatch, by Benefit Type (2004-2015)

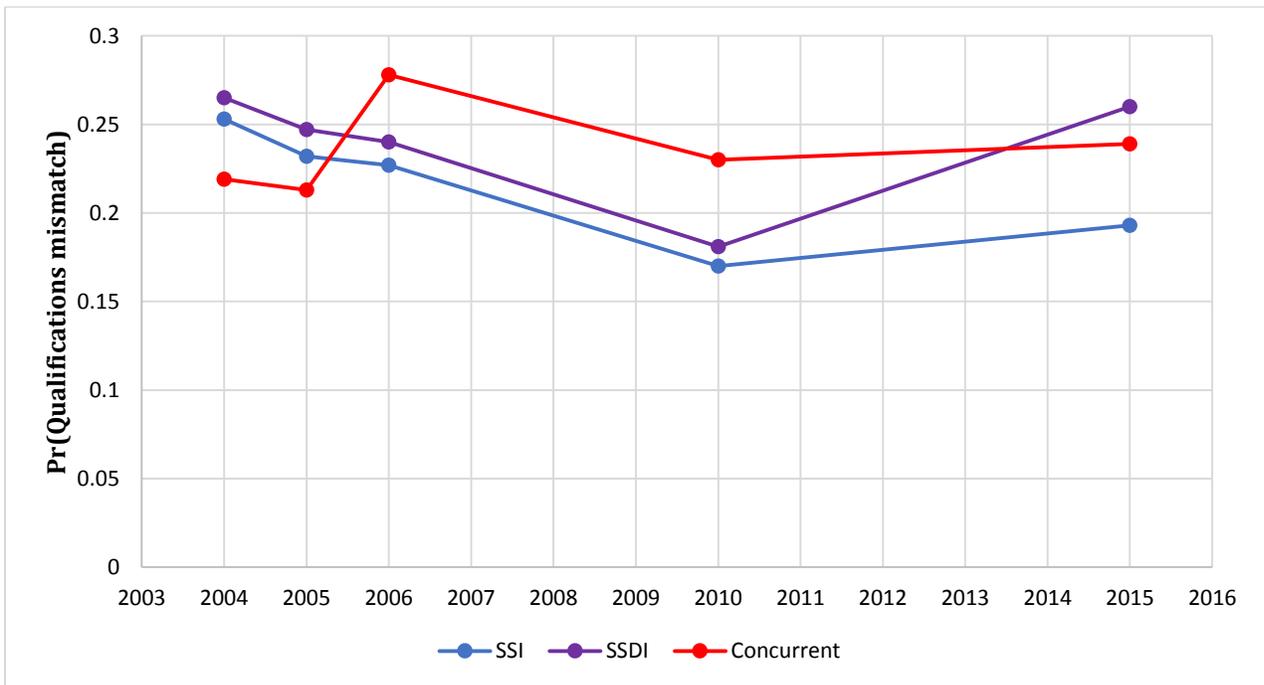


Figure 4. Probabilities of Reporting No Job of Interest, by Gender (2004-2015)

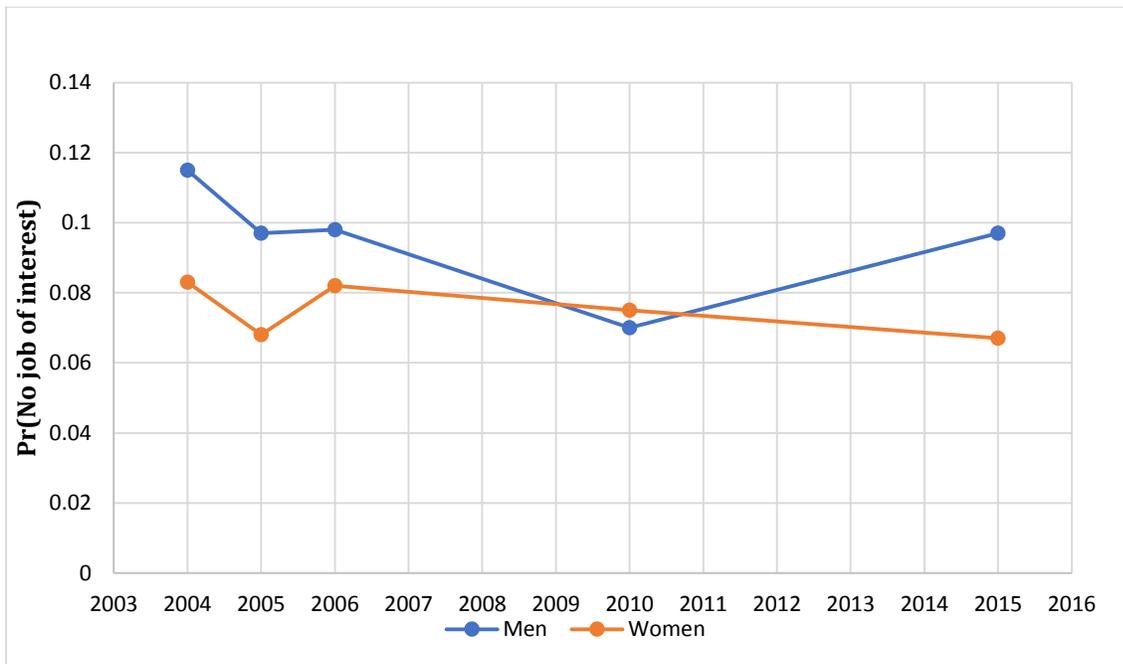


Figure 5. Probabilities of Reporting No Job of Interest, by Benefit Type (2004-2015)

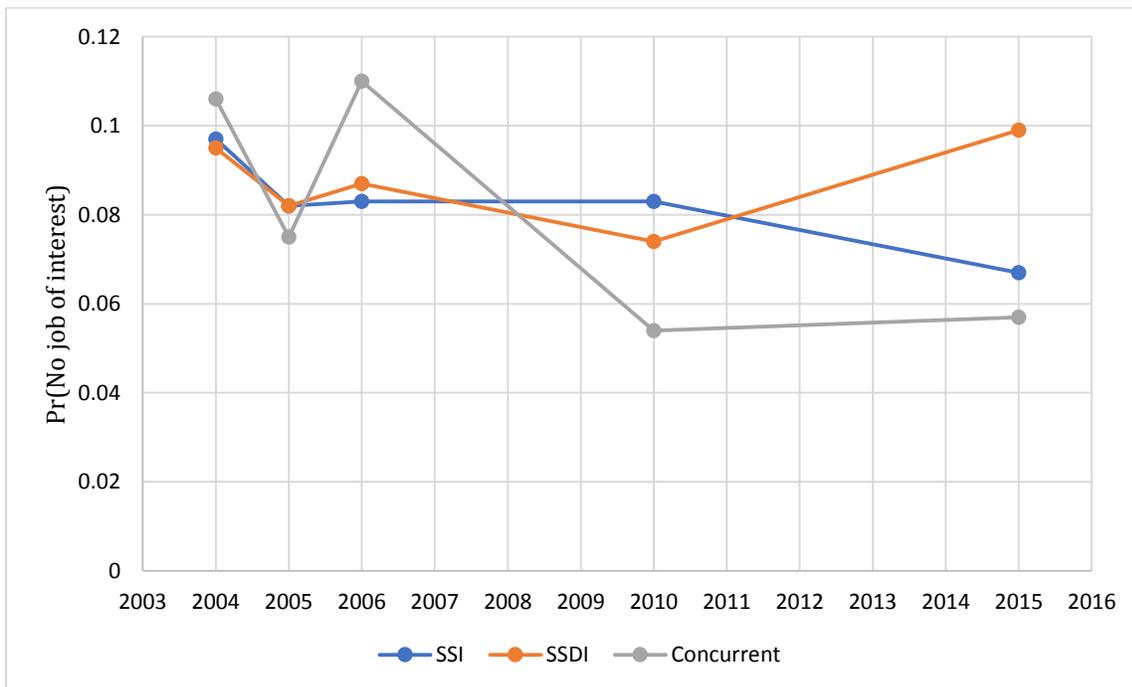


Figure 6. Probabilities of Reporting Workplace Inaccessibility, by Gender (2004-2015)

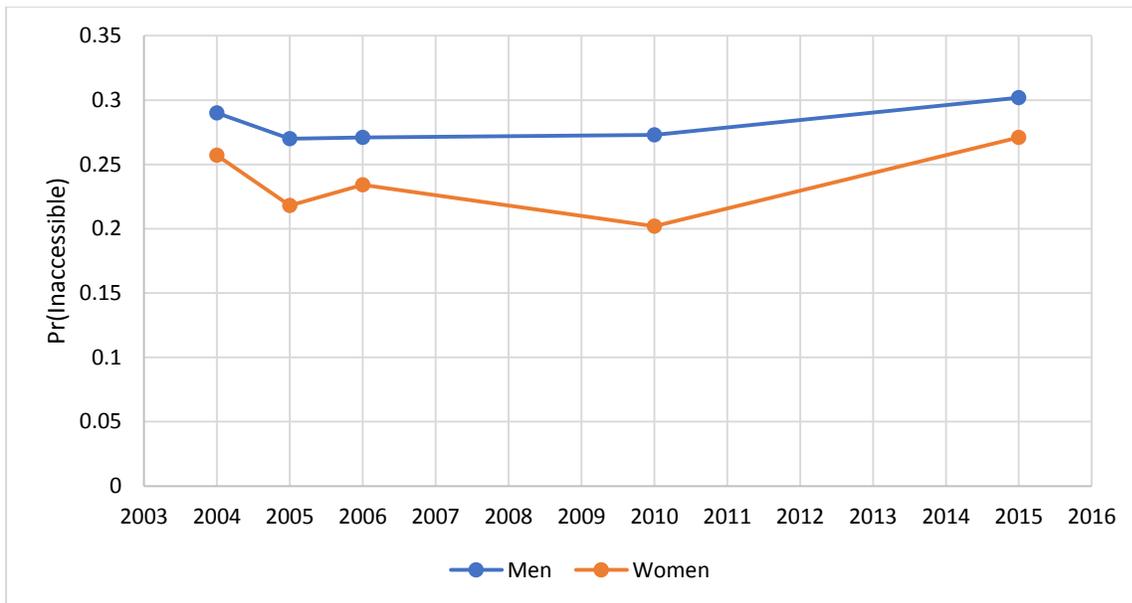


Figure 7. Probabilities of Reporting Workplace Inaccessibility, by Benefit Type (2004-2015)

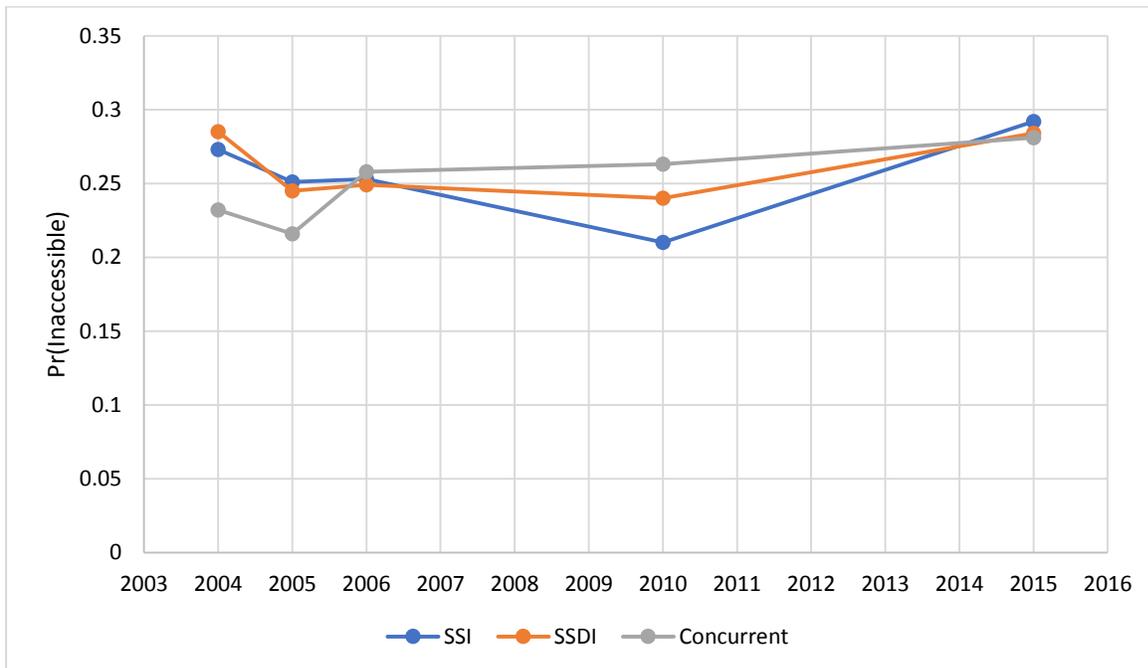


Figure 8. Probabilities of Reporting Fear of Losing Benefits, by Gender (2004-2015)

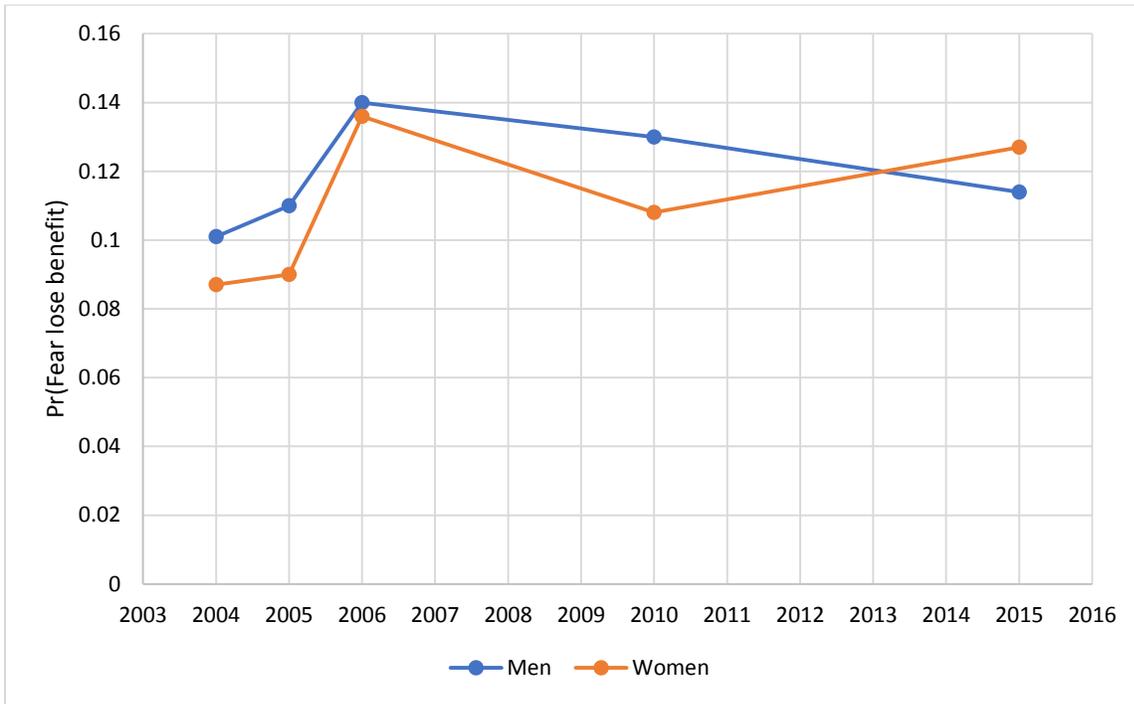


Figure 9. Probabilities of Reporting Others Do Not Think Respondent Can Work, by Gender (2004-2015)

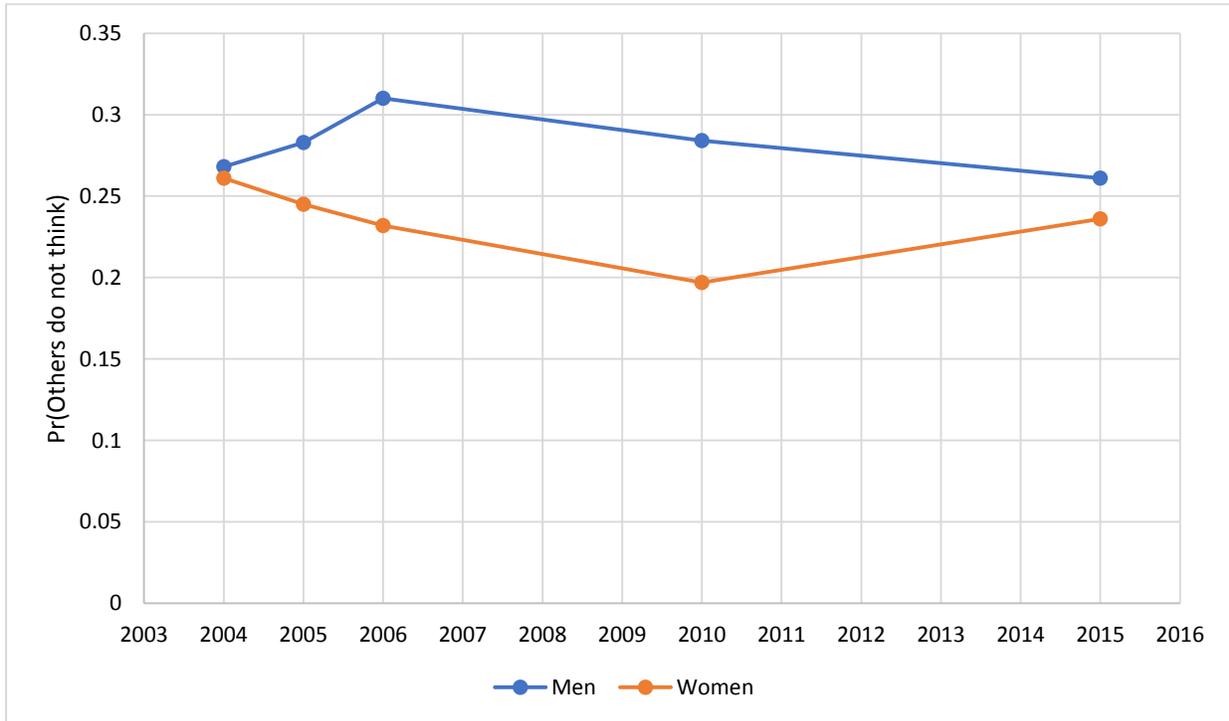


Figure 10. Probabilities of Reporting Others Do Not Think Respondent Can Work, by Benefit Type (2004-2015)

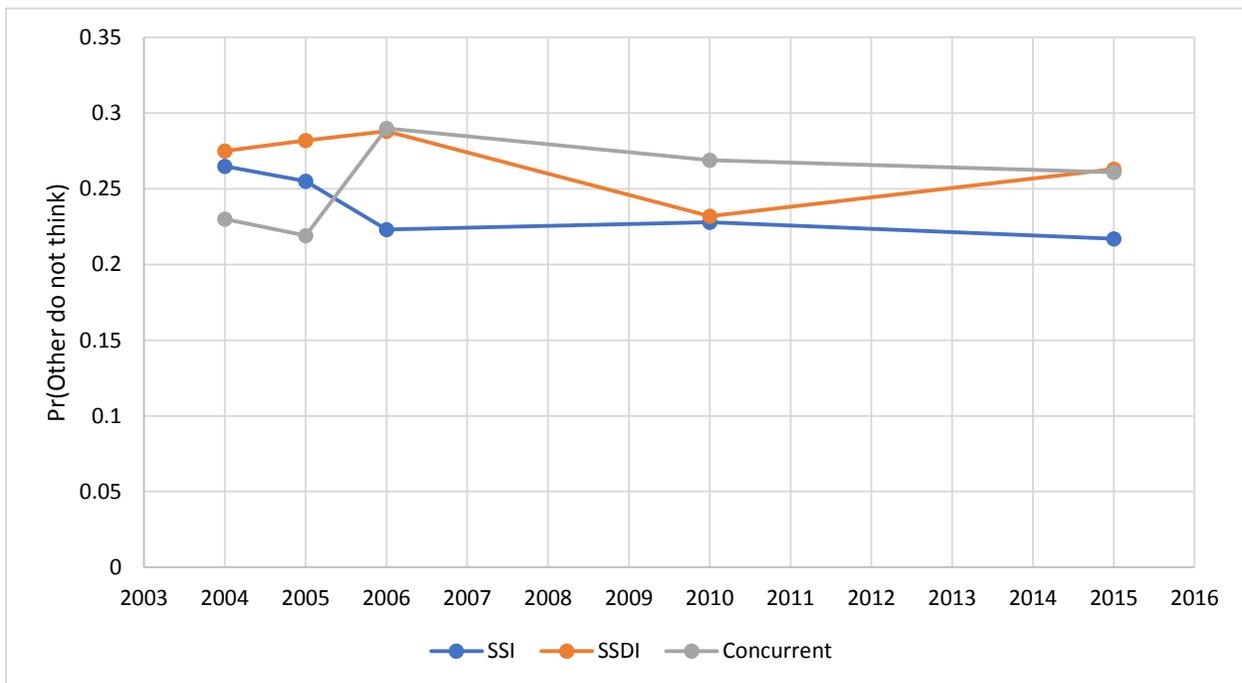


Figure 10. Probabilities of Reporting Employers will Not Give Respondent a Chance, by Gender (2004-2015)

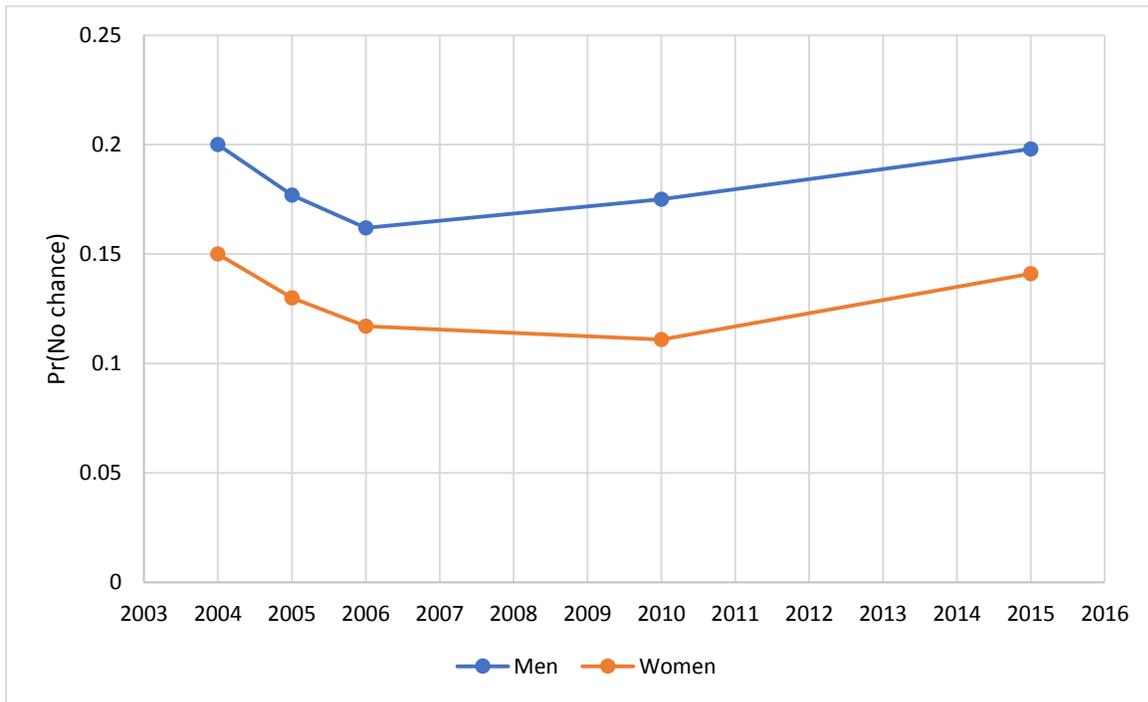


Figure 11. Probabilities of Reporting Needs for Special Equipment or Devices, by Gender (2004-2015)

