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Contrasting Competitively Employed and Unemployed VR Applicants with Visual Disabilities: Characteristics and VR Service Delivery Patterns

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Characteristics and VR Service Delivery Patterns

Abstract

Background: Approximately one-third of the working age population of persons with visual disabilities is employed. Recent federal legislation stressed the importance of VR services to assist employed persons with disabilities retain or advance in employment, but we know little about employed VR applicants.

Objective: This study sought to identify and contrast characteristics and services received by VR consumers with visual disabilities based on employment status at application.

Methods: VR cases from fiscal year 2015 were analyzed using logistic regression. The sample included 4,586 competitively employed applicants and 9,643 unemployed applicants.

Results: Competitively employed applicants tended to be White non-Hispanic, older, more educated, and less likely to have non-cognitive disabilities. Competitively employed applicants tended to receive on-the-job supports, rehabilitation technology, counseling and guidance, technical assistance, and diagnosis and treatment.

Conclusions: Competitively employed applicants with visual disabilities have different characteristics and service patterns from unemployed applicants. VR counselors can anticipate applicants' service delivery needs based on their employment status while considering individual goals and circumstances. Future research regarding job retention for competitively employed applicants who are blind or have low vision appears warranted.

Key Words: blind, visually impaired, low vision, competitive employment, vocational rehabilitation, retention, career advancement

Contrasting Competitively Employed and Unemployed VR Applicants with Visual Disabilities: Characteristics and VR Service Delivery Patterns

1. Introduction

The U.S. labor force participation rate for persons with disabilities (37.6%) has recently increased but remains well below that of persons without disabilities (76.6%) (Brennan-Curry, 2017). Persons with disabilities have traditionally faced high unemployment and underemployment (Iyer & Masling, 2015) and had difficulty retaining employment (Roessler, 2002). For working aged persons with visual disabilities, an estimated 32.3% are employed (Bureau of Labor Statistics, 2016). These figures indicate that while the majority of persons with visual disabilities are unemployed, almost one-third do engage in employment.

Vocational rehabilitation (VR) services assist people with disabilities in preparing for and finding employment, and for persons who are already employed, retaining or advancing in that employment. The reauthorization of the Rehabilitation Act, Workforce Innovation and Opportunity Act (WIOA, P. L. 113-128) stated that VR should give priority to persons at "imminent risk of losing their jobs" (U.S. Department of Education, 2014). The Rehabilitation Services Administration (RSA, 2014) reinforced this commitment, advising that job retention services be provided even when an order of selection is in place. WIOA also states that employed persons with disabilities may be eligible for VR services to advance in employment and that employment status must not be considered when determining eligibility for services (LEAD Center, 2015). Given this renewed focus on job retention and career advancement, further research regarding vocational services for persons who are already employed when they apply for services is warranted, particularly for persons who are blind or have low vision.

1.1 Job retention

The limited research examining job retention and vocational rehabilitation has yielded interesting results. Two older studies found that 25% to 50% of consumers did not retain employment after VR services (Gibbs, 1990; Roessler & Bolton, 1985). Research that is more recent has focused on specific disability populations. Disease-related issues influenced job retention of persons with multiple sclerosis, though transportation to and mobility around the workplace further interfered with job retention (O'Connor, Cano, Torrenta, Thompson, & Playford, 2005). Persons with multiple sclerosis benefited from job retention services that stressed worker empowerment and were delivered immediately after diagnosis (Rumrill, Koch, & Wohlford, 2013). The importance of timely service delivery to persons with chronic illness was identified as an important factor in facilitating job retention (Koch, Rumrill, Conyers, & Wohlford, 2013; Rumrill et al., 2013). Employed persons with diabetes received a different pattern of VR services than unemployed persons with diabetes and understanding these differences was expected to allow VR providers to respond more efficiently to individual consumer needs (Chiu et al., 2015).

1.2 Job retention and visual impairment

Among persons with visual impairments, those over 65 years of age tended to be employed more often than those 16 to 34 years; 75 % of the older group were employed and received mainly assessment, counseling, and rehabilitation technology services (Dutta, Gervey, Chan, Chou, & Ditchman, 2008). Persons who are blind and who retained employment in a different job title after receiving VR services were younger, sustained vision loss earlier, and had more severe disabilities than persons who retained employment in the same job title, who tended to have less severe vision impairments and have college degrees (Herndon, 1995).

As found among persons with multiple sclerosis (O'Connor et al., 2005), transportation to work and travel within the workplace were among the problems in job retention of persons who are blind, though persons who are blind also experienced barriers associated with using office equipment, the pace of the work, stress, and accessing print (Rumrill, Schuyler, & Longden, 1997). Other barriers to job retention were adjustment to disability, access issues, and technology (Sikka & Stephens, 1997). Strategies to address the barriers to job retention included communication among the VR counselor, employer, and consumer; thorough assessments; technology; and timely service delivery (Crudden & Fireson, 1997; Sikka & Stephens, 1997). Job retention among persons with vision loss has not been the focus of more recent research.

1.3 Career advancement

Promoting careers for people with disabilities rather than entry-level placements or "dead-end" jobs has long been advocated as a means of empowering VR consumers and helping them reach their employment potential (Hope & Rice, 1995). However, research regarding career advancement appears scant and dated. Leonard, D'Allura, and Horowitz (1999) found that among persons with vision loss, those most likely to be employed in higher positions had more education, had computer and keyboard skills, and were blind rather than visually impaired. Persons who are blind and seeking career advancement experienced similar barriers to those seeking job retention, such as transportation, navigating the workplace, using office equipment, the pace of work, handling stress, accessing print, and identifying signs and labels; worksite accommodations tended to involve technology (Rumrill, et al., 1997).

There is a lack of research exploring potential VR service delivery patterns among people with visual disabilities and the research regarding job retention in this population is dated. Given the recent emphasis WIOA is placing on job retention and career advancement, and the

challenges that people who are blind or have low vision experience retaining and advancing in employment, it is important initially to identify the characteristics of persons who are employed when they apply for VR services. Determining if employed applicants with vision loss receive a different array of VR services than persons who are unemployed will yield additional information about this group of employed consumers who are defying the odds and engaging in competitive employment.

The purpose of this study was to identify and contrast the personal characteristics and services received by persons who are blind or have low vision based on employment status at application to the VR system. The ability to anticipate the characteristics and services needed by persons seeking to retain or advance in employment may allow VR providers to initiate and proceed with service delivery in a more efficient and timely way. Our research questions were:

1. What are the characteristics of employed VR applicants who are blind or have low vision?
2. What VR services did employed applicants who are blind or have low vision receive?
3. What differences are there, in terms of characteristics and services received, between employed and unemployed VR applicants who are blind or have low vision?

2. Method

RSA collects case service data from state VR agencies documenting consumer application and receipt of services. This study used the RSA-911 case service dataset for fiscal year 2015. Of the 555,075 VR closed cases related to all types of disabilities in FY 2015, 24,470 cases had blindness or other visual impairments as the primary disability. This study further selected consumers between 18 and 75 years old, who signed an individualized plan for employment, and received at least one VR service, thus reducing the sample to 14,583 persons.

These consumers were either employed or unemployed at application. Employed persons compensated below the federal minimum wage (n = 354) were excluded from the sample, consistent with the RSA (2013) definition of competitive employment. The final sample size for this study was 14,229.

2.1 Analysis variables

The *dependent variable* was employment status at application. Competitive employment included the following categories from the RSA manual (2013) (a) employment without support in an integrated setting, (b) employment with supports in an integrated setting, (c) self-employment except for BEP, and (d) state agency-managed Business Enterprise Program (BEP). Cases indicating competitive employment at application with earnings at or above the federal minimum wage were coded "1". Cases indicating unemployment at application were coded "0" and included extended employment, homemaker, unpaid family worker, and other not employed categories.

Two sets of *explanatory variables* were used for this study. The first set of explanatory variables were demographic and socioeconomic characteristics. Gender was indicator coded (0 = male; 1 = female). Age was a continuous variable with a range of 18 to 75 years. Race/ethnicity categories in the RSA manual included (a) African American, (b) American Indian, (c) Asian American, (d) Hawaiian or Pacific Islander, (e) White non-Hispanic, (f) Multiple race, and (g) Hispanic-White, and were indicator coded (0 = No; 1 = Yes). White non-Hispanic was the reference group. Education was treated as a continuous variable with 10 levels ranging from 0 = No formal schooling, to 9 = Education above a Master's degree or an occupational credential beyond graduate degree work. Primary disability was dichotomous (0 = Visual impairment, not legally blind; 1 = Legal blindness). Cognitive secondary disability, noncognitive secondary

disability, receipt of Social Security Disability Insurance (SSDI), and receipt of Supplemental Security Income (SSI) were dichotomous variables (0 = No; 1 = Yes).

The second set of explanatory variables included each of the VR services received (0 = No; 1 = Yes). Four service variables were excluded—apprenticeship training, interpreter, personal attendant, and customized employment services—because the overall utilization rates were less than 1%. As in previous research (Giesen & Cavenaugh, 2012; Giesen & Hierholzer, 2016), based on a factor analysis, we organized the remaining 24 services into four clusters: (a) seven Job Related Services: job placement assistance, job search assistance, on-the-job supports (short term), job readiness training, on-the-job supports (supported employment), on-the-job training, and benefits counseling; (b) five Technology and Disability Training services: rehabilitation technology, disability-related skills training, miscellaneous training, other services, and transportation; (c) seven Education and Support Services: four-year college or university training, maintenance, junior or community college training, reader services, graduate college or university training, occupational or vocational training, and basic academic remedial or literacy training; and (d) five Information and Evaluation Services: vocational rehabilitation counseling and guidance, information and referral services, diagnosis and treatment of impairments, assessment, and technical assistance services.

2.2 Data analysis

Logistic regression using SAS 9.4 PROC LOGISTIC was applied to differentiate consumers' employment status at the time of application (competitively employed vs. unemployed) using socioeconomic-demographic characteristics and VR services received as explanatory variables. This approach allowed identification of variables that differentiated between competitively employed and unemployed applicants. Explanatory variables were

entered in two blocks, first entering individual demographic and socioeconomic variables and then VR service indicators. A regression screening analysis was run yielding variance inflation factors (VIFs) for each of the explanatory variables. These ranged from 1.0125 to 1.3444, indicating no problems with multicollinearity.

3. Results

3.1 Descriptive statistics

At the time of application to VR services, the sample of 14,229 participants included 7,386 men (51.9%) and 6,843 women (48.1%). This included 4,586 (32.2%) persons who were competitively employed at application and 9,643 (67.8%) who were not employed. Of the competitively employed applicants, 3,792 (82.7%) retained or advanced in employment at closure. There were 793 (17.3%) who were not competitively employed at closure. The average age of the sample was 45.5 years (*SD* = 14.0). Regarding level of education, 15.1% of the consumers had less than high school education, over a third (35.2%) held a high school or equivalency certificate, nearly a third (30.3%) had some post-secondary education, and almost one-fifth (19.4%) held a Bachelors' degree or above.

Of the competitively employed applicants, the average weekly earnings at application was $498.42 (*SD* = $456.42) and on average, they worked 31.4 hours per week (*SD* = 11.5). The median overall time between application and case closure was 22 months, with 14 months for competitively employed applicants and 26 months for unemployed applicants. The overall average number of VR services received was 4.7 (*SD* = 2.6), with competitively employed applicants receiving an average of 4.1 services (*SD* = 2.1) and unemployed applicants averaging 5 services (*SD* = 2.7). Descriptive statistics of percentages and means for both groups and the overall sample are in Table 1.

3.2 Results for logistic regression model

For demographic and socioeconomic factors, the likelihood ratio test for model goodness-of-fit was significant, χ^2 (14, N = 14,229) = 1,900.75, $p < .001$, indicating that demographic and socioeconomic characteristics contributed to the differentiation of employment status at application. The Nagelkerke R^2 was .17. After adding the second block of service variables into the model, the likelihood ratio test remained significant, χ^2 (38, N = 14,229) = 2,939.06, $p < .001$, indicating that the set of all explanatory variables in the model contributed to the differentiation of employment status at application. The Nagelkerke R^2 was .26, indicating a large effect size for the overall model and indicating a 9% increase in the variance of employment status explained by adding service variables into the model. The change of likelihood ratio was significant, $\Delta\chi^2$ (24, N = 14,229) = 1038.31, $p < .001$, indicating that VR services were significantly associated with consumers' employment status at application. The two groups of applicants (competitively employed vs. unemployed) were also differentiated, as we will see, based on the patterns of services received.

3.2.1 Demographic-socioeconomic factors.

The logistic regression estimates, standard errors, Wald χ^2, observed significance levels, odds ratios, and 95% confidence intervals of odds ratios are in Table 2. From the logistic regression model, if a significant variable ($p < .05$) achieved an odds ratio greater than 1, the result indicated the competitively employed applicants' status was positively related to the particular variable, or the service was more likely to be received by competitively employed applicants. If a significant variable achieved an odds ratio smaller than one, it indicated the competitively employed applicants' status was negatively related to the variable, or the service was more likely to be received by an unemployed applicant.

There was no gender difference between competitively employed and unemployed applicants (p = .40). There was a significant effect of race/ethnicity in differentiation of employment status at application. Persons who were African American, Multiple race, or Hispanic-White were more likely to be unemployed at application. Compared to being White non-Hispanic, odds of being competitively employed at application were about 25.5% lower if the consumer was African American, 32.6% lower if of multiple races, and 26.7% lower if Hispanic-White. Other race/ethnicity indicators, including being American Indian, Asian American, and Hawaiian or Pacific Islander, were not significant in the model.

The significant positive estimates for age (OR = 1.011) and education level (OR = 1.173) indicated that older and more highly educated consumers had higher odds of being competitively employed at application. Legal blindness, compared to visual impairment, was not a significant discriminating indicator between those who were competitively employed and unemployed at application (p = .74), nor was having a cognitive secondary disability (p = .23). Consumers with noncognitive secondary disabilities had 23.2% lower odds of competitive employment at application than those who did not have a noncognitive secondary disability. In addition, odds of being in the competitively employed group were 57.2% lower for SSDI recipients and 70.5% lower for SSI recipients compared to nonrecipients.

3.2.2 VR services variables.

In general, six services were significantly positively related to competitive employment status at the time of application, twelve services were significantly negatively related to competitive employment status at the time of application, and six services were not significantly related according to the logistic regression model at the significance level of .05.

The significant variables indicated there was discrimination between competitively employed and unemployed applicants based on the pattern of utilization and receipt of VR services. In the Job-Related Services cluster (including seven services), the odds of being in the competitively employed applicant group were about 87.5% higher if the consumer received on-the-job support services (short term) than if they did not receive the service. Similarly, the odds of being in the competitively employed applicant group were about 47.5% higher if on-the-job support services (supported employment) were received than if not. The odds of being competitively employed at application were reduced by 46.6% if the applicant received job placement assistance, reduced 45.5% if the applicant received job search assistance, and reduced 40.7% if the applicant received job readiness training. No significant service utilization differences were found for on-the-job training and benefits counseling services between the two applicant groups. Thus, receipt of on-the-job support services (short term) and on-the-job support services (supported employment) were associated with competitive employment at application and job placement assistance, job search assistance, and job readiness training were associated with unemployment at application.

In the Technology and Disability Training Services cluster, all five services were significant discriminating variables. The odds of being in the competitively employed applicant group were 69.6% higher if consumers received rehabilitation technology services compared to those not receiving the services. The odds of being in the competitively employed at application group were reduced as indicated for receipt (vs. nonreceipt) of the following training/services: miscellaneous training (38.4% reduction), transportation services (33.8% reduction), disability-related skills training (24.6% reduction), other services (23.0% reduction). Thus, receipt of rehabilitation technology services was associated with competitive employment at application,

whereas disability-related skills training, miscellaneous training, other services, and transportation services were associated with unemployment at application.

In the Education and Support Services cluster (including seven services), the odds of being competitively employed at application were reduced 53.2% for receiving junior or community college training, reduced 46.5% for receipt of basic academic remedial or literacy training, reduced 35.4% for receipt of four-year college or university training, reduced 30.9% for occupational or vocational training, and reduced 14.9% for receiving maintenance services. No significant service utilization differences were found for reader services ($p = .89$) or graduate college or university training ($p = .59$) between competitively employed and unemployed applicants. Thus, compared to competitively employed applicants, unemployed applicants were more likely to receive services in the Education and Support Services cluster, including four-year college or university training, maintenance services, junior or community college training, occupational or vocational training, and basic academic remedial or literacy training.

In the Information and Evaluation Services cluster (including five services), the odds of being competitively employed at application were 37.6% higher if the consumer received technical assistance services, 37.2% higher if the consumer received VR counseling and guidance services, and 29.4% higher if the consumer received diagnosis and treatment of impairments services. No significant discrimination effect was found between the two applicant groups for receipt of information and referral services ($p = .33$) or assessment services ($p = .08$). Thus, competitively employed applicants were more likely to receive VR counseling and guidance, diagnosis and treatment of impairments, and technical assistance services compared to unemployed applicants.

4. Discussion

We investigated whether persons who are blind or have low vision and had competitive employment at application for VR services have different characteristics or receive a different pattern of services from persons who are blind or low vision and are unemployed at application. Identifying such a pattern may help VR service providers anticipate service delivery needs and proceed with service delivery in a more timely way, with the goal of increasing job retention or advancement among competitively employed applicants. Our analysis found that almost one-third (32.2%) of VR applicants with visual disabilities were competitively employed and that the majority of the competitively employed applicants (82.7%) retained or advanced their employment. Competitively employed applicants do have distinct demographic characteristics and receive a different pattern of VR services than unemployed applicants.

Persons who are blind or have low vision who were competitively employed at application were more likely to be White non-Hispanic, older, more highly educated, and less likely to have a non-cognitive secondary disability than unemployed applicants. Not surprisingly, the competitively employed applicants were also less likely to be receiving SSI or SSDI. Because competitively employed applicants were less likely to have non-cognitive disabilities, this group appears to be comprised primarily of persons who were not facing complex health/disability issues beyond those associated with their vision loss.

Persons with vision loss competitively employed at application were approximately five years older than those unemployed at application (48.7 vs. 43.8). This is consistent with previous research that found older applicants with vision loss more likely to be employed (Dutta et al, 2008). As age increases, odds of employment at application increase. For a five-year increase, the odds of competitive employment at application increase by 5.7% and for a ten-year increase, the odds of employment at application increase by 11.6%. VR services can be very beneficial for

applicants in their 40s or early 50s who may be motivated to continue their employment for a substantial number of years despite their vision loss. These older workers are also highly educated, indicating that many may have invested significant portions of their lives in preparing for their employment. Consequently, persons competitively employed at application were less likely to receive services associated with education and support. Perhaps because they were less likely to spend time pursuing education and support, competitively employed applicants tended to have their cases closed after a shorter period than unemployed applicants did.

Interestingly, neither level of vision loss nor gender were discriminating factors. Because we do not have the date of vision loss, we cannot determine if applicants sustained their vision loss before or after becoming employed. Persons employed at application may apply for services for a number of reasons including those related to changes in vision or changes in their vocational environments.

Based on the odds ratio as an effect size measure, we now consider some variables with the largest effect sizes for employed applicants. The VR services that most distinguish competitively employed from unemployed applicants were in the Job Related Services cluster. The largest effect was for short-term on-the-job-supports, or services to “stabilize the placement and enhance job retention” and which typically include services such as a time-limited job coach (RSA, 2013). For persons with blindness or low vision, these short-term services could also include consulting with the employer about how people who are blind perform job tasks or addressing co-workers’ questions about working with someone with vision loss. Given that most employers are unfamiliar with how workers who are blind function on the job (McDonnall, O’Mally, & Crudden, 2014), many employers may need information about how workers can move from doing a job as a sighted person to performing with little or no vision, or how a person

with impaired vision can accommodate additional vision loss. VR counselors may be advised to discuss employer sensitivity with employed consumers seeking job retention services.

Receiving supported employment services, also a job-related service, strongly discriminated between those competitively employed and unemployed at application, with competitively employed applicants tending to receive this service. Only 99 of the competitively employed applicants received this service. Supported employment services are designed for people with the most significant disabilities who typically have difficulty finding or retaining employment. Our follow-up analysis indicated less than half of the competitively employed persons who received supported employment services had secondary disabilities. Further investigation of the population of persons with vision loss who engage in supported employment appears warranted. It would be helpful to know the situations in which supported employment is implemented with consumers who do not have disabilities beyond their visual impairment.

Competitively employed applicants tended to receive rehabilitation technology, a category that includes rehabilitation engineering, assistive technology devices, and assistive technology services. In a previous study (Chan & Rumrill, 2016), only a small percentage (10.4%) of VR consumers received assistive technology and related services and those recipients tended to be those with sensory impairments. Rehabilitation technology enables people with vision loss to perform a variety of work related tasks, particularly with regard to print access. Workers who experience vision loss that requires a change in reading medium, such as moving from large print to audio, may also turn to VR for rehabilitation technology assistance. VR counselors should expect many employed applicants to need assistance with identifying, learning to use, and obtaining appropriate rehabilitation technology.

Competitively employed applicants were more likely to receive services associated with information and evaluation, including counseling and guidance, technical assistance, and diagnosis and treatment. Counseling and guidance would likely help competitively employed applicants with adjustment to vision loss. Technical assistance includes services such as labor market analyses, independent and small business operation, or telecommuting. These services may be particularly applicable to persons with vision loss who are able to work from home or who engage in self-employment and may allow them to avoid transportation barriers. Competitively employed applicants also tended to receive diagnosis and treatment services, indicating that these applicants may be new to vision loss and still in need of medical intervention or are experiencing changes in an existing visual disability.

The effectiveness of service delivery for competitively employed applicants was not included in the scope of this study. Further research to assess the impact of services received on competitive employment status is indicated, particularly for competitively employed applicants who are not successful in retaining their employment status. The data analyzed in this study are from fiscal year 2015 and as state agencies fully embrace the changes associated with WIOA, numbers of competitively employed applicants may increase.

Distinct demographic and service delivery patterns emerged from this analysis but the limitations associated with this research should be considered. Variables in this study were limited to the availability of RSA-911 case study dataset. Unavailable factors, such as specific level of vision, age at onset of vision loss, or employment-related self-efficacy level, would be expected to influence the importance of these available explanatory variables. This analysis is based on existing records and assumes that state agencies have entered accurate data. This sample size is relatively large leading to high power, which may result in finding small effects to

be statistically significant. For this reason, heightened attention needs to be paid to effect sizes for significant effects, to determine their practical significance.

5. Conclusion

VR applicants who are blind or have low vision and are competitively employed tend to have a different demographic profile and receive a different pattern of services from applicants who are unemployed. VR counselors can anticipate that competitively employed applicants will tend to be older and more highly educated, and need on-the-job supports (both short-term and supported employment), rehabilitation technology, counseling and guidance, technical assistance, and diagnosis and treatment. VR counselors provide individualized services dependent on consumer needs. However, as with consumers with diabetes (Chiu et al., 2015), the ability to anticipate these service delivery needs may assist VR counselors in expediting timely delivery of services, a need identified in previous research as an important factor in job retention with persons who are blind or have low vision (Crudden & Fireson, 1997; Sikka & Stephens, 1997).

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Table 1
Descriptive Statistics for Predictors by Group

Variables	Employed at application	Unemployed at application	Overall
Demographics			
Female	49.6	47.4	48.1
Age (*M*)	48.7 (12.6)	43.9 (14.4)	45.5 (14.0)
White-Non Hispanic (reference)	67.5	55.3	59.2
African American	21.8	29.9	27.3
American Indian	0.9	1.1	1.0
Asian American	2.1	1.9	1.9
Hawaiian or Pacific Islander	0.4	0.4	0.4
Multiple race	1.2	1.7	1.5
Hispanic-White	6.3	9.7	8.6
Education level (*M*)	5.2 (1.8)	4.6 (1.7)	4.8 (1.8)
Legal blindness	43.0	54.4	50.7
Cognitive secondary disability	2.0	4.4	3.6
Noncognitive secondary disability	32.8	39.5	37.4
SSDI	19.5	34.5	29.7
SSI	7.7	26.7	20.5
Job Related Service Cluster			
Job Placement Assistance	10.0	22.4	18.4
Job Search Assistance	6.6	16.2	13.1
On-the-job Supports (Short Term)	8.5	7.6	7.9
Job Readiness Training	4.0	13.2	10.2
On-the-job Supports (Supported Employment)	2.2	2.2	2.2
On-the-job Training	1.2	3.0	2.4
Benefits Counseling	2.7	4.3	3.8
Technology and Disability Training Service Cluster			
Rehabilitation Technology	59.1	58.3	58.6
Disability-Related Skills Training	25.0	34.6	31.5
Miscellaneous Training	6.4	14.2	11.7
Other Services	21.4	31.8	28.4
Transportation	23.0	43.0	36.5
Education and Support Service Cluster			
Four-Year College or University Training	3.4	8.8	7.0
Maintenance	10.8	21.5	18.1
Junior or Community College Training	0.8	3.5	2.7
Reader Services	0.5	1.6	1.2
Graduate College or University Training	0.8	1.2	1.1
Occupational or Vocational Training	4.5	10.6	8.6
Basic Academic, Remedial or Literacy Training	0.3	1.6	1.2
Information and Evaluation Service Cluster			
VR Counseling and Guidance	68.3	60.8	63.2
Information and Referral Services	16.0	18.1	17.4
Diagnosis and Treatment of Impairments	65.6	54.9	58.3
Assessment	59.5	62.2	61.3
Technical Assistance Services	6.0	4.5	5.0

Note. Values are proportions or means. Standard deviations presented in parenthesis adjacent to means (*M*) for age and education. SSDI = Social Security Disability Insurance. SSI = Supplemental Security Income. SSDI, SSI, and education were at application. Total N = 14,229; Employed applicants, n = 4,586; Unemployed applicants, n = 9,643. Data from RSA-911 Case Service Report, 2015.

Table 2
Logistic Regression Results Differentiating Competitive vs. Unemployed Status

Variable	*b*	*SE*	Wald χ^2	*p*	*OR*	95% *CI*
Demographics						
Female	0.034	0.041	0.711	.399	1.035	[0.956, 1.120]
Age	0.011	0.002	51.469	<.001	**1.011**	[1.008, 1.015]
African American	-0.295	0.048	37.563	<.001	*0.745*	[0.678, 0.818]
American Indian	-0.277	0.206	1.820	.177	0.758	[0.507, 1.134]
Asian American	-0.145	0.145	1.001	.317	0.865	[0.652, 1.149]
Hawaiian or Pacific Islander	-0.261	0.314	0.694	.405	0.770	[0.417, 1.424]
Multiple race	-0.394	0.174	5.152	.023	*0.674*	[0.480, 0.948]
Hispanic-White	-0.310	0.079	15.393	<.001	*0.733*	[0.628, 0.856]
Education level	0.160	0.012	171.700	<.001	**1.173**	[1.145, 1.202]
Legal blindness	-0.015	0.046	0.111	.739	0.985	[0.900, 1.078]
Cognitive secondary disability	-0.158	0.130	1.468	.226	0.854	[0.662, 1.102]
Noncognitive secondary disability	-0.265	0.043	38.771	<.001	*0.768*	[0.706, 0.834]
SSDI	-0.848	0.050	288.032	<.001	*0.428*	[0.388, 0.472]
SSI	-1.221	0.066	342.139	<.001	*0.295*	[0.259, 0.336]
Job Related Service Cluster						
Job Placement Assistance	-0.627	0.065	94.459	<.001	*0.534*	[0.471, 0.606]
Job Search Assistance	-0.607	0.076	63.860	<.001	*0.545*	[0.470, 0.633]
On-the-job Supports (Short Term)	0.628	0.083	57.906	<.001	**1.875**	[1.594, 2.204]
Job Readiness Training	-0.522	0.090	33.668	<.001	*0.593*	[0.498, 0.708]
On job Supports (Supported Employment)	0.389	0.153	6.475	.011	**1.475**	[1.093, 1.991]
On-the-job Training	0.028	0.163	0.029	.866	1.028	[0.747, 1.414]
Benefits Counseling	0.125	0.119	1.116	.291	1.133	[0.898, 1.430]
Technology and Disability Training Service Cluster						
Rehabilitation Technology	0.528	0.047	126.553	<.001	**1.696**	[1.547, 1.860]
Disability-Related Skills Training	-0.283	0.049	32.795	<.001	*0.754*	[0.684, 0.830]
Miscellaneous Training	-0.484	0.076	40.879	<.001	*0.616*	[0.531, 0.715]
Other Services	-0.261	0.050	27.524	<.001	*0.770*	[0.699, 0.849]
Transportation	-0.413	0.050	69.512	<.001	*0.662*	[0.600, 0.729]
Education and Support Service Cluster						
Four-Year College or University Training	-0.436	0.102	18.309	<.001	*0.646*	[0.529, 0.789]
Maintenance	-0.162	0.064	6.432	.011	*0.851*	[0.751, 0.964]
Junior or Community College Training	-0.759	0.185	16.806	<.001	*0.468*	[0.326, 0.673]
Reader Services	-0.036	0.251	0.021	.886	0.965	[0.590, 1.577]
Graduate College or University Training	0.116	0.214	0.294	.588	1.123	[0.738, 1.710]
Occupational or Vocational Training	-0.369	0.088	17.509	<.001	*0.691*	[0.582, 0.822]
Basic Academic Remedial or Literacy Training	-0.626	0.313	4.002	.045	*0.535*	[0.290, 0.987]
Information and Evaluation Service Cluster						
VR Counseling and Guidance	0.316	0.044	51.240	<.001	**1.372**	[1.258, 1.496]
Information and Referral Services	-0.055	0.057	0.957	.328	0.946	[0.847, 1.057]
Diagnosis and Treatment of Impairments	0.258	0.044	35.105	<.001	**1.294**	[1.188, 1.409]
Assessment	-0.074	0.043	2.995	.084	0.929	[0.855, 1.010]
Technical Assistance Services	0.319	0.093	11.696	.001	**1.376**	[1.146, 1.652]
Constant	-1.496	0.1133	174.431	<.001		

Note. White non-Hispanic was the reference category of race. Variable names and *ORs* in bold denote significant and positive estimates associated with *ORs* > 1. Variable names and *ORs* in italic denote significant and negative estimates associated with *ORs* < 1. Variable names and *ORs* in regular font denote nonsignificant estimates. Total N = 14,229; Employed applicants, n = 4,586; Unemployed applicants, n = 9,643. Data from RSA-911 Case Service Report, 2015.