Earnings and Demographic Variations among Vocational Rehabilitation Occupational Closures: Patterns and Trends, 2008–2012

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Abstract

Advancing the positive employment and earning outcomes of people with disabilities is imperative. People with disabilities have lagged labor participation than those without disabilities, and this disparity is increasing. The patterns of employment and earnings, as well as their variations by demographic characteristics among people with disabilities remains poorly understood. Using data from the Rehabilitation Services Administration's (RSA) Case Service Report for fiscal years 2008 to 2012, we determined general patterns of occupations at Vocational Rehabilitation (VR) case closure and evaluated demographic characteristics including age, sex and racial compositions of VR occupational closure. Then we studied the earning trends and differentials by demographic, disability and educational attainments. We have found that overtime, occupational patterns are consistent, and that demographic variations by occupation patterns are significant. Median hourly wage varies significantly by occupation, demographic characteristics, and are strongly related to level of education. These findings have important implications for VR researchers, practitioners, and for people with disabilities seeking better employment outcomes.

Key Words: Vocational Rehabilitation, Occupations, Demographic, Earnings

Background:

Work and employment are key components of social inclusion for people with disabilities. However, the gap of labor force participation between people with and without disabilities has widened in recent years. According to the most recent Current Population Survey (CPS), 17.6 % of persons with a disability were employed, compared to the employment-population ratio of 64.0% for those without a disability. The unemployment rate for those with a disability was 13.2 % in 2013, compared to 7.1% for their nondisabled peers [1]. Advancing the positive employment and earning outcomes of people with disabilities is imperative. In the United States, the federal-state vocational rehabilitation (VR) program under the Rehabilitation Services Administration (RSA) helps people with disabilities to acquire and maintain meaningful employment [2]. The Federal government's commitment to increasing the number and quality of employment outcomes in competitive, integrated settings for individuals with disabilities has been increasing. On July 2014, the Workforce Innovation and Opportunity Act (WIOA) was signed into law putting a greater emphasis on employment for people with disabilities [3].

Over the past decades, research has shown that the demographic characteristics of people with disability receiving VR services has a direct impact on their labor force participation [4]. A couple of demographic variables have been identified as influencing VR access and benefits, such as gender [5], race and ethnicity [6], age [7] and education [8]. Previous studies have examined demographic characteristics against the VR outcomes of individuals with different disabilities, such as people with hearing disability [9], visual impairments [10], developmental disabilities [11], and physical and sensory disabilities [12]. Prior research assessed VR outcomes mostly by looking at whether or not VR consumers are employed. However, the pattern of occupational closure and earnings, as well as their variations by demographic characteristics

among people with disabilities who are served by the VR program remains unclear. The patterns are complicated by the fact that disability can be dynamic, although deterioration is more usual than improvement. Study has shown there is no univariate direction in the associations between disability and socio-economic status [13]. If these gaps regarding VR occupational closure patterns are addressed, especially in relation to demographic patterns and earnings, better understanding can be gained on the labor participation for people with disabilities and help them achieve better employment outcomes.

To address these issues, the current study draws data from the Rehabilitation Services Administration's Case Service Report (RSA-911) for fiscal years 2008 to 2012. It describes VR employment outcomes by occupational categories assessed by the Standard Occupational Classification system (SOC), and describes the variations of demographic and primary disability characteristics in VR occupational closures. Finally, it examines the earning differentials by demographic and disability characteristics.

Data and Methods:

Occupational information at closure is an important outcome indicator in VR. We used the Rehabilitation Services Administration's Case Service Report (RSA-911) to examine patterns of occupational codes at closure over the past five years (2008–2012) across the 80 VR agencies in the United States. RSA-911 database is a public access database compiled with input from agencies providing services within the state-federal program for VR. This administrative dataset contains information of individual characteristics, services provided, and employment outcomes of all VR customers whose cases were closed out in a fiscal year. The original dataset does not contain any personal identifiers such as name, address, social security number, and zip code, etc.

The national level data adopted in the current study is a pooled aggregation of the above stated personal files by each state. It shows the exact number of VR consumers employed by occupation in each state in a given fiscal year. Only cases with successful employment closures were included in this study (N=868,695).

The RSA-911 data contains occupation codes at closure as defined by the 2010 Standard Occupational Classification (SOC) system (http://www.bls.gov/soc/). The SOC system classifies together occupations that have similar job duties, skills, education, and/or training. This system is composed of 840 detailed occupations, 461 broad occupations, 97 minor groups, and 23 major groups. We recoded six-digit detailed codes that represent specific occupations at closure in the RSA-911 data into 23 major groups as defined by the SOC system to look at national and state-level trends and patterns, and demographic and disability variations in occupation trends and patterns.

We developed three age groups for policy interests: the Transition age group (VR consumers aged between 14 and 24 years old), the Middle age group (VR consumers between 25 and 64 years old) and the Elderly (VR consumers aged 65 years old and above). From the detailed racial and ethnic descriptions in the RSA-911, we defined four broader racial and ethnic categories as White (non-Hispanic), African American (non-Hispanic), other races (non-Hispanic) and Hispanic. In addition, we grouped 19 primary impairment categories into four primary disability categories as: Sensory Impairments, Orthopedic Impairments, Cognitive Impairments and Psychosocial and Other Mental Impairments. Regarding education at closure, we recoded educational attainment into five broad groups: no education/elementary school, secondary school to special education certificate, high school graduate, and post-secondary to associate degree, and bachelor's degree and above. Finally, we assessed wage by the hourly

wage at closure, which is the consumer's weekly earning divided by the number of hours worked per week. Because the hourly wage distribution is highly skewed, for comparison at the national level by different individual-level characteristics, we chose the median instead of the mean as an assessment of central tendency.

We reported the five-year average rate for each major SOC group by calculating the mean percentage of VR consumers closed in a certain major occupational category in a given year, relative to all VR consumers with employment closure in that year. Because the top six occupational categories employ as many as 60% of VR consumers each year, part of the analysis focused on the demographic and earning distribution by the top six biggest closure occupational categories. While we present the cross-year comparison of earning, the hourly wage was adjusted to 2012 dollars to address the inflation effects.

Results:

Overview of VR Closure Occupation Patterns

Using the SOC system that defines occupational categories, Table 1 shows the VR closure patterns from 2008 to 2012. The number of individuals being closed in a particular occupation seems to vary over time, and more precisely to decrease over time. In 2008, 31,013 individuals were closed with an office and administrative support occupation however, in 2012, 19,730 individuals were closed in the same occupation. Although the percent change is from 15.2% to 14.3% it points to an overall decrease in the number of cases that were successfully closed during that time frame. For certain occupations such as military specific occupations, the number of individuals employed in 2012 was higher than the number of individuals employed in 2008 going from 198 to 346 which is a 74.7% increase. While the number of individuals

employed in each occupation changes, the relative regularity at which they are being placed in a particular occupation remains the same. This implies that there is some consistency in the way that cases are closed and leads to the question, are the individuals served by VR agencies more prone to getting or seeking employment in a particular occupation. According to Schur [14], people with disabilities are less likely to be employed in traditional full-time jobs because of their health problems and to a smaller extant because of employer discrimination and disability income program earnings limits. The top six jobs on the table are jobs that provide a great deal of flexibility to employees, which in turn would allow people with disabilities with chronic medical conditions the opportunity to tend to their medical issues.

Overview of Demographic Patterns and Variations

Age

Age is a key demographic characteristic that adds context to workforce and employment. Across their lifespan, individuals change jobs and get employed in different occupations, based on their personal preferences or under the influence of the labor market demands. Table 2 summarized the mean age (in years) across major occupation categories. Table 3 provides distribution by the three age groups across the top six major occupational types in the same period. Since we are looking at the distribution within each age group, their individual size does not affect the distribution. Apparently, the top six occupations employ a bigger proportion of younger people, i.e., individuals aged between 14 and 24. Nearly 64% of transition age VR consumers, 58% of working age VR consumers and approximately 41% of the elderly VR consumers are employed in the top six occupations. This pattern becomes starker for

occupational groups such as Food Preparation and Serving Related Occupations and Sales and Related Occupations.

Gender

Through our analysis we observed that gender distribution across major occupational categories remained consistent over the five-year period. For all VR consumers with employment outcomes in our sample, 56.2% were men and 43.8% were women. We calculated gender ratio (women to men) for each major occupation group to get a finer understanding of gender based distribution across that five-year period. Table 4 reports gender ratio (women to men) by major occupation categories. Gender ratios are relatively stable across the five-year time period. However, there is significant variation in gender ratio across different occupational categories. For example, healthcare-related occupations (Healthcare Support Occupations, Healthcare Practitioners and Technical Occupations, and Personal Care and Service Occupations) employ 5 times more women than men; the Education, Training, and Library Occupations employ 2.3 times more women than men. By contrast, more physically demanding occupations such as Construction and Extraction Occupations and Transportation and Material Moving Occupations mainly employ men. Detailed description by occupation is shown in Table 3 as ratio of women over men employed under any major occupation type.

Race/ethnic groups

For the five-year period, individuals whose cases were closed with employment outcomes were distributed as 66.5% White (non-Hispanic), 20.8% African American (non-Hispanic), 2.3% other (non-Hispanic), and 10.3% Hispanic as a total for all occupation types. These percentages of distribution closely mimics the closures for all the cases presented in RSA-911. For

comparison of occupational employment outcome within each racial/ethnic group, Table 5 shows the distribution within each racial/ethnic category across all major occupation categories, 2008–2012. This table highlights the relative propensity of different occupations to employ VR consumers from a particular racial category. Table 6 presents the distribution by racial/ethnic categories across the top 6 most frequent major occupation categories. Through our analysis it was found that the closure percentage for African American (non-Hispanic) VR consumers is markedly higher in Office and Administrative Support Occupations and in occupations related to Food Preparation and Serving than their closure percentages for all occupation categories combined.

Types of disability/impairment

For the five-year period, among the individuals who were closed with employment outcomes, 20.9% were persons with sensory and communicative impairments, 23.2% were persons with orthopedic impairments, 28.0% were person with cognitive impairments, and 27.9% were persons with psychosocial and other mental impairments for all occupation types. Table 7 shows the distribution within each disability groups across major occupation categories and depicts how consumers under a disability category are distributed across all the major occupation categories. This allows us to identify particular occupational categories that are main employers of VR consumers of certain disability. Table 8 shows distribution by disability categories across the top 6 most frequent major occupation categories. Based on our sample in the five-year period, in the top six occupational categories, as many as 69.5% of VR consumers with cognitive impairments, 63.4% of VR consumers with psychosocial and other mental impairments, 51.8% of VR consumers with physical impairment, and 47.6% of VR consumers with sensory impairments were employed. We also observed that the VR consumers with physical or sensory

and communicative impairments are relatively more dispersed across different occupation categories than cognitive or psychosocial and other mental impairments.

Education

The distribution of educational attainment among successful closures is another focus of this paper. Across all occupations, 2% of individuals whose cases were closed had no education/elementary education, 17.5% had some secondary education or had a special education certificate, 36.6% had high school diplomas, 30.4% had a post-secondary or an associate's degree, and 13.5% held a bachelor's degree or a more advance degree.

Table 9 shows the percentages in distribution of educational attainment among the 23 occupations. Among the top six occupational categories, about 40% of closures were individuals with high school diplomas, and the proportion increased slightly from 2008 to 2012. Office and Administrative Support Occupations employ mostly individuals with high school diplomas or post-secondary/associate's degree. The proportion of individuals with elementary school education or less decreased in 2012. They were more represented in Building and Ground Cleaning and Maintenance Occupations, Production Occupations, and Transportation and Material Moving Occupations. Occupations that require more sophisticated and comprehensive skills mainly employ individuals with college or more advanced degrees. These occupations include Education, Training and Library Occupations (61%), Legal Occupations (62%), Life, Physical and Social Science Occupations (60%), Community and Social Services Occupations (over 54%), and Business and Financial Operation Occupations (51%).

Table 10 shows the adjusted median hourly wage (inflation adjusted to 2012 dollars) for all 23 occupations from 2009 to 2012.The top six occupations marked the low end of the wage

spectrum, with the median hourly wage ranging from $8 to $10. Across all occupations, occupations such as Healthcare Practitioners and Technical Occupations, Business and Financial Operations Occupations, Architecture and Engineering Occupations, and Legal Occupations represent the highest-paying jobs, with a median wage of over $16 per hour. A cross-year comparison shows that median wage declined for most occupations across the five- year period. However, exceptions were observed in Life, Physical, and Social Science Occupations; Legal Occupations; and Military Specific Occupations.

Earnings patterns and variations

Table 11 shows the adjusted median wage (inflation adjusted to 2012 dollars) by individual characteristics (age, gender, race/ethnicity, education, and disability type). In general, hourly wage varies significantly by occupation and decreases from 2008 to 2012 in most occupations after adjusting to 2012 dollars.

Age is positively associated with earnings for the top six occupation groups. The difference between wages of young and middle-aged adults (25+ years) and elderly (65+ years) are very small. Transition-age youth (14 to 24 years) group is the group that earns the least, controlling for occupation. Gender differences in wages vary by occupation type. Males generally earn higher wages than females in most occupations, except for Office and Administrative Support Occupations. In terms of gender variation, only Transportation and Material Moving Occupations were observed to have a minor increase of median wage from 2008 to 2012. For race/ethnicity, there are no significant differences across all racial and ethnic groups in terms of earnings for a particular occupation. The median hourly wage varies slightly across all occupation groups in relation to race/ethnicity. Wage was shown to vary by the type of

disability or impairment. Individuals with developmental disabilities represented the lowest paid group in the top six occupation categories. People with visual, hearing, and orthopedic impairments were the highest paid groups.

Higher educational attainment is positively associated with a higher median wage across most occupations, with the exception of the lowest educational attainment group, as shown in Table 4. These findings could be attributed to some outliers, as only 2% in our sample had no education or only an elementary education. Although only 13.5% among the successfully closed cases held a bachelor's or a more advanced degree, they represent the highest paid group in the top six occupation categories.

Conclusion:

Our study examined occupation types, demographic and primary disability variations of VR case closures with successful employment outcomes from 2008 to 2012, as well as the variation in education attainment and how that relate to the earning differentials. In general, cross-year changes in rates of employment among major occupational categories can suggest broad economic trends and changes in labor market. We have found that at the national level, the proportions at which VR consumers are placed into major occupational categories are mostly stable, implying stability of VR placement patterns. However, we are unable to jump to the conclusion that there is a steady demand for related industry sectors at the national level based on these findings. Different states could show a varied pattern, depending on the economy and labor market trends. Examination of state-level occupational employment data and industry sector data are will be needed.

Patterns of the demographic characteristics in our sample are informative for VR strategic planning and have implications for people served by federal-state VR systems. Across the five-year period between 2008 and 2012, we have determined clear patterns of individuals with certain demographic characteristics employed by certain occupations. The earning differentials by gender or by race/ethnicity among successful VR occupational closures in recent years will add to the more recent scholarship on gender and racial inequality and employment outcomes. The power of human capital investment in terms of education is significantly and positively associated with the wage outcome, supporting the argument of previous studies[15, 16]. However, economic returns of educational attainment, though apparent, are more complicated than a linear relationship. Regarding wage, at the national level, earning differentials across occupations are obvious each year. Over time, wage gap between occupations didn't change much. Across states, wage disparities reflect state-level economic climates. We suggest that crossroads between demographic characteristics, educational attainment and earning outcomes are informative for VR job placement. Though limited in scope, there are some policy implications from our preliminary analysis of demographic and primary disability variations across the occupations.

Future studies that identify influential factors on occupational closure patterns will be informative, including statistical controls and stratification by demographic and disability characteristics, the multivariate associations between these above stated factors and the wage outcome, and multilevel analysis of how individual characteristics and state economy play out to affect occupation and wage outcomes, so VR may benefit from this information and place more people with disabilities into better paying jobs. In addition, there are new sources of inequality such as skill-biased technological change, globalization, and political redistribution that

transcend the traditional arguments of gender and racial gaps in wages and complicate the labor market [17], and could also affect VR consumers' labor force participation. How these factors may affect may add to a more comprehensive understanding of the work and employment of people with disabilities.

References

1. BLS, *U.S. Bureau of Labor Statistics: Persons with a disability: labor force characteristics — 2013.* http://www.bls.gov/news.release/disabl.toc.htm, 2013.
2. Mandeville, K. and R. Brabham, *The state-federal vocational rehabilitation program.* Rehabilitation counseling Basics and Beyond, 1992: p. 43-72.
3. Solberg, V.S., E. Castine, and B. Brown, *New Dawn for Career Development: Announcing the Workforce Innovation and Opportunity Act.* New Dawn, 2014. **9**: p. 01.
4. Bowe, F., *Demography and Disability: A Chartbook for Rehabilitation.* 1983.
5. Menz, F.E., et al., *Gender equity in access, services and benefits from vocational rehabilitation.* The Journal of Rehabilitation, 1989. **55**(1): p. 31.
6. Giesen, J.M., B.S. Cavenaugh, and W.K. Sansing, *Access to Vocational Rehabilitation: The Impact of Race and Ethnicity.* Journal of Visual Impairment and Blindness, 2004. **98**(7): p. 410-419.
7. Rabren, K., G. Hall, and C. Brown, *Employment of transition-age rehabilitation consumers: Demographic and programmatic factors.* Journal of Vocational Rehabilitation, 2003. **18**(3): p. 145-152.
8. Blackwell, T.L., et al., *Predictors of vocational Rehabilitation return-to-work outcomes in workers' compensation.* Rehabilitation Counseling Bulletin, 2003. **46**(2): p. 108-114.
9. Capella, M.E., *Evaluating Differences in Demographics, Services, and Outcomes for Vocational Rehabilitation Consumers with Hearing Loss versus Consumers with Other Disabilities.(Hearing Loss vs. Other Disability Groups).* The Journal of Rehabilitation, 2003. **69**(3): p. 39.
10. Capella-McDonnall, M., *Predictors of competitive employment for blind and visually impaired consumers of vocational rehabilitation services.* Journal of Visual Impairment & Blindness (JVIB), 2005. **99**(05).
11. Migliore, A. and J. Butterworth, *Trends in Outcomes of the Vocational Rehabilitation Program for Adults With Developmental Disabilities: 1995—2005.* Rehabilitation Counseling Bulletin, 2008. **52**(1): p. 35-44.
12. Pack, T.G. and G.M. Szirony, *Predictors of competitive employment among persons with physical and sensory disabilities: An evidence-based model.* Work: A Journal of Prevention, Assessment and Rehabilitation, 2009. **33**(1): p. 67-79.
13. Grundy, E. and K. Glaser, *Socio-demographic differences in the onset and progression of disability in early old age: a longitudinal study.* Age and Ageing, 2000. **29**(2): p. 149-157.
14. Schur, L.A., *Barriers or Opportunities? The causes of contingent and part-time work among people with disabilities.* Industrial Relations 2003. **42**(4): p. 589 - 622.
15. Blundell, R., et al., *Human capital investment: the returns from education and training to the individual, the firm and the economy.* Fiscal studies, 1999. **20**(1): p. 1-23.
16. Brand, J.E. and Y. Xie, *Who benefits most from college? Evidence for negative selection in heterogeneous economic returns to higher education.* American Sociological Review, 2010. **75**(2): p. 273-302.
17. Leicht, K.T., *Broken Down by Race and Gender? Sociological Explanations of New Sources of Earnings Inequality.* Annual Review of Sociology, 2008. **34**(1): p. 237-255.

Tables and Figures

Table 1

Overview of VR closure occupation patterns, RSA911, 2008 - 2012

	Years									
	2008		2009		2010		2011		2012	
Major Occupation Categories	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Office and Administrative Support Occupations	31013	15.2	25338	14.8	24663	14.1	24945	13.8	19730	14.3
Food Preparation and Serving Related Occupations	20709	10.1	18405	10.8	18444	10.5	19260	10.7	14536	10.5
Building and Grounds Cleaning and Maintenance Occupations	17457	8.5	15436	9	16194	9.3	17020	9.4	13157	9.5
Sales and Related Occupations	17736	8.7	14734	8.6	15208	8.7	15710	8.7	12003	8.7
Transportation and Material Moving Occupations	16967	8.3	13638	8	14601	8.3	15532	8.6	11800	8.5
Production Occupations	16769	8.2	12441	7.3	13987	8	14996	8.3	11358	8.2
Personal Care and Service Occupations	11084	5.4	9933	5.8	10079	5.8	10164	5.6	7906	5.7
Installation, Maintenance, and Repair Occupations	10125	5	8175	4.8	8882	5.1	9671	5.4	7628	5.5
Healthcare Support Occupations	7956	3.9	7799	4.6	8037	4.6	8130	4.5	6010	4.4
Education, Training, and Library Occupations	7315	3.6	6178	3.6	5883	3.4	5556	3.1	4194	3
Construction and Extraction Occupations	7160	3.5	5417	3.2	5678	3.2	5790	3.2	4117	3
Management Occupations	6617	3.2	5440	3.2	5199	3	4993	2.8	3869	2.8
Community and Social Services Occupations	5977	2.9	5277	3.1	5236	3	4919	2.7	3916	2.8
Healthcare Practitioners and Technical Occupations	5943	2.9	4935	2.9	4913	2.8	4758	2.6	3751	2.7
Others	5149	2.5	4672	2.7	4274	2.4	4256	2.4	3062	2.2
Protective Service Occupations	3458	1.7	2680	1.6	2633	1.5	2803	1.6	2306	1.7
Business and Financial Operations Occupations	3156	1.5	2678	1.6	2839	1.6	2737	1.5	2239	1.6
Computer and Mathematical Occupations	2244	1.1	1782	1	1818	1	1993	1.1	1607	1.2
Arts, Design, Entertainment, Sports, and Media Occupations	2610	1.3	2133	1.2	2168	1.2	2127	1.2	1706	1.2
Architecture and Engineering Occupations	1781	0.9	1258	0.7	1241	0.7	1227	0.7	954	0.7
Farming, Fishing, and Forestry Occupations	1217	0.6	1113	0.7	1151	0.7	1186	0.7	889	0.6
Life, Physical, and Social Science Occupations	1000	0.5	823	0.5	904	0.5	771	0.4	616	0.4
Legal Occupations	637	0.3	511	0.3	560	0.3	473	0.3	424	0.3
Military Specific Occupations	198	0.1	173	0.1	452	0.3	1263	0.7	346	0.3
Total	**204278**		**170969**		**175044**		**180280**		**138124**	

Table 2

Mean age across major occupation categories, RSA 911

Major Occupation Categories	Mean	SD
Military Specific Occupations	22.2	5.3
Food Preparation and Serving Related Occupations	25.7	0.5
Personal Care and Service Occupations	30.2	0.9
Sales and Related Occupations	31.2	1.5
Installation, Maintenance, and Repair Occupations	32	0.8
Architecture and Engineering Occupations	34.3	1.2
Production Occupations	34.3	0.7
Life, Physical, and Social Science Occupations	34.7	0.9
Computer and Mathematical Occupations	34.9	0.6
Farming, Fishing, and Forestry Occupations	35	3.3
Arts, Design, Entertainment, Sports, and Media Occupations	36.1	0.9
Office and Administrative Support Occupations	36.5	0.8
Transportation and Material Moving Occupations	36.5	0.5
Building and Grounds Cleaning and Maintenance Occupations	36.7	0.9
Healthcare Practitioners and Technical Occupations	36.7	0.5
Healthcare Support Occupations	36.7	0.5
Construction and Extraction Occupations	37	0.8
Education, Training, and Library Occupations	38.3	0.7
Protective Service Occupations	40	1.3
Legal Occupations	40.2	0.9
Community and Social Services Occupations	42	0.6
Business and Financial Operations Occupations	42.2	0.7
Management Occupations	43.8	0.7
Others	51.8	0.7

Table 3

Distribution by age groups across the top 6 most frequent major occupation categories, RSA 911, 2008 - 2012

	Age Groups			
	Transition Age [14-24]	**Middle Age [25-64]**	**Elderly [65+]**	**Total**
Major Occupation Categories		**%**		
Office and Administrative Support Occupations	13.6	15.0	12.3	14.5
Food Preparation and Serving Related Occupations	15.3	8.4	3.1	10.5
Building and Grounds Cleaning and Maintenance Occupations	8.4	9.7	4.5	9.1
Sales and Related Occupations	10.7	7.6	10.4	8.7
Transportation and Material Moving Occupations	7.8	8.7	7.5	8.4
Production Occupations	8.1	8.2	3.5	8.0
All Other Occupations	36.1	42.4	58.8	40.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Table 4

Gender ratio (women to men) by major occupation categories, RSA 911, 2008 – 2012

	Years					
Major Occupation Categories	**2008**	**2009**	**2010**	**2011**	**2012**	**Mean**
Office and Administrative Support Occupations	1.44	1.43	1.36	1.27	1.26	1.35
Food Preparation and Serving Related Occupations	0.86	0.82	0.75	0.77	0.78	0.80
Building and Grounds Cleaning and Maintenance Occupations	0.50	0.47	0.46	0.45	0.46	0.47
Sales and Related Occupations	1.21	1.22	1.16	1.18	1.19	1.19
Transportation and Material Moving Occupations	0.19	0.19	0.18	0.18	0.18	0.18
Production Occupations	0.35	0.34	0.31	0.31	0.30	0.33
Personal Care and Service Occupations	2.25	2.11	2.05	2.09	2.15	2.13
Installation, Maintenance, and Repair Occupations	0.14	0.14	0.13	0.15	0.16	0.14
Healthcare Support Occupations	5.35	4.99	4.85	4.73	5.08	5.00
Education, Training, and Library Occupations	2.33	2.30	2.42	2.43	2.37	2.37
Construction and Extraction Occupations	0.04	0.03	0.03	0.03	0.03	0.03
Community and Social Services Occupations	1.54	1.55	1.49	1.50	1.55	1.53
Management Occupations	0.67	0.75	0.66	0.69	0.74	0.70
Healthcare Practitioners and Technical Occupations	3.05	3.15	2.95	2.97	2.99	3.02
Protective Service Occupations	0.31	0.25	0.31	0.28	0.28	0.29
Business and Financial Operations Occupations	0.98	1.02	1.01	1.05	1.02	1.02
Arts, Design, Entertainment, Sports, and Media Occupations	0.86	0.80	0.77	0.74	0.75	0.78
Computer and Mathematical Occupations	0.26	0.23	0.25	0.27	0.23	0.25
Architecture and Engineering Occupations	0.16	0.15	0.14	0.11	0.14	0.14
Farming, Fishing, and Forestry Occupations	0.19	0.17	0.17	0.19	0.18	0.18
Life, Physical, and Social Science Occupations	0.80	1.03	0.95	0.93	1.00	0.94
Legal Occupations	1.24	1.39	1.29	1.38	1.30	1.32
Military Specific Occupations	0.14	0.11	0.79	0.92	0.70	0.53

Table 5

Distribution within each racial/ethnic categories across all major occupation categories, 2008 – 2012

	Race/Ethnicity				
	White	**African American**	**Others**	**Hispanic**	**Total**
Major Occupation Categories	**%**				
Office and Administrative Support Occupations	14.7	13.2	17.0	15.2	14.5
Food Preparation and Serving Related Occupations	9.7	13.9	10.0	9.3	10.5
Building and Grounds Cleaning and Maintenance Occupations	7.8	13.3	8.9	9.5	9.1
Sales and Related Occupations	9.2	6.8	8.3	9.3	8.7
Transportation and Material Moving Occupations	7.9	10.1	6.7	8.2	8.4
Production Occupations	7.8	8.4	8.2	8.4	8.0
Personal Care and Service Occupations	5.3	6.2	5.8	6.7	5.7
Installation, Maintenance, and Repair Occupations	5.4	4.3	5.2	5.1	5.1
Healthcare Support Occupations	3.9	5.5	3.4	4.9	4.4
Education, Training, and Library Occupations	3.7	2.3	3.3	3.2	3.4
Construction and Extraction Occupations	3.5	2.6	2.4	3.1	3.2
Management Occupations	3.6	1.6	2.5	2.3	3.0
Community and Social Services Occupations	2.9	3.2	2.8	2.3	2.9
Healthcare Practitioners and Technical Occupations	3.2	1.6	2.7	2.4	2.8
Others	2.6	2.1	2.8	2.3	2.5
Protective Service Occupations	1.5	1.8	1.4	1.9	1.6
Business and Financial Operations Occupations	1.8	1.0	2.0	1.1	1.6
Arts, Design, Entertainment, Sports, and Media Occupations	1.4	.6	1.5	1.3	1.2
Computer and Mathematical Occupations	1.3	.6	1.7	.8	1.1
Architecture and Engineering Occupations	.9	.2	.9	.8	.7
Farming, Fishing, and Forestry Occupations	.7	.3	.6	.7	.6
Life, Physical, and Social Science Occupations	.5	.2	.7	.5	.5
Legal Occupations	.3	.1	.3	.3	.3
Military Specific Occupations	.3	.2	.7	.5	.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note. Hispanics were excluded from all of the races/ethnicities other than Hispanic.

Table 6

Distribution by racial/ethnic categories across the top 6 major occupation categories, RSA 911, 2008 – 2012

	Race/Ethnicity				
	White	**African American**	**Others**	**Hispanic**	**Total**
Major Occupation Categories			**%**		
Office and Administrative Support Occupations	61.1	27.5	2.2	9.2	100.0
Food Preparation and Serving Related Occupations	56.5	30.4	2.3	10.8	100.0
Building and Grounds Cleaning and Maintenance Occupations	70.3	16.3	2.2	11.1	100.0
Sales and Related Occupations	67.4	18.9	2.7	10.9	100.0
Transportation and Material Moving Occupations	64.9	21.9	2.4	10.8	100.0
Production Occupations	62.9	25.1	1.9	10.1	100.0
All Other Occupations	70.0	17.5	2.3	10.1	100.0
Total	**66.5**	**20.8**	**2.3**	**10.3**	**100.0**

Note. Hispanics were excluded from all of the races/ethnicities other than Hispanic.

Table 7

Distribution within disability groups by major occupation categories, RSA 911, 2008 – 2012

	Disability Categories			
	Sensory/Communicative Impairments	**Physical Impairments**	**Cognitive Impairments**	**Psychosocial and Other Mental Impairments**
Major Occupation Categories		**%**		
Office and Administrative Support Occupations	15.1	17.1	12.5	13.8
Food Preparation and Serving Related Occupations	5.5	5.7	16.2	12.5
Building and Grounds Cleaning and Maintenance Occupations	5.8	5.6	13.2	10.4
Sales and Related Occupations	7.6	8.9	9.3	8.7
Transportation and Material Moving Occupations	6.7	8.1	9.1	9.0
Production Occupations	6.9	6.4	9.2	9.0
Personal Care and Service Occupations	4.1	5.4	6.8	5.9
Installation, Maintenance, and Repair Occupations	4.5	4.2	6.3	5.1
Healthcare Support Occupations	3.6	4.9	3.8	5.1
Education, Training, and Library Occupations	6.1	4.4	1.9	1.9
Construction and Extraction Occupations	2.9	2.9	2.6	4.4
Management Occupations	5.1	4.9	1.2	1.7
Community and Social Services Occupations	3.4	4.1	1.1	3.4
Healthcare Practitioners and Technical Occupations	3.6	4.2	1.4	2.4
Others	8.3	1.6	0.5	0.8
Business and Financial Operations Occupations	2.6	2.6	0.5	1.0
Protective Service Occupations	1.9	2.1	1.3	1.2
Arts, Design, Entertainment, Sports, and Media Occupations	1.7	1.7	0.8	1.0
Computer and Mathematical Occupations	1.3	1.7	0.6	0.9
Architecture and Engineering Occupations	1.0	1.2	0.5	0.5
Farming, Fishing, and Forestry Occupations	0.7	0.7	0.7	0.4
Life, Physical, and Social Science Occupations	0.6	0.8	0.2	0.4
Legal Occupations	0.5	0.5	0.1	0.2
Military Specific Occupations	0.2	0.3	0.4	0.3
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note. Results are ordered by number of employment closures for major occupation type in descending order.

Table 8

Distribution by disability categories across the top 6 most frequent major occupation categories, RSA 911, 2008 – 2012

	Disability Categories				
	Sensory Impairments	**Orthopedic Impairments**	**Cognitive Impairments**	**Psychosocial and Other Impairments**	**Total**
Major Occupation Categories			**%**		
Office and Administrative Support Occupations	11.0	12.6	43.3	33.1	100.0
Food Preparation and Serving Related Occupations	13.4	14.3	40.4	32.0	100.0
Building and Grounds Cleaning and Maintenance Occupations	18.4	23.6	30.2	27.9	100.0
Sales and Related Occupations	21.8	27.4	24.2	26.6	100.0
Transportation and Material Moving Occupations	18.0	18.6	32.1	31.3	100.0
Production Occupations	16.7	22.5	30.5	30.3	100.0
All Other Occupations	26.7	27.3	20.9	25.1	100.0
Total	20.9	23.2	28.0	27.9	100.0

Table 9

Distribution of education by major occupation categories in selected years (2008 and 2012)

	No Education- Elementary School		Secondary School- Special Ed Certificate		High School Grad		Post-Secondary- Associate Degree		B. A. and above	
	Years									
	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
Major Occupation Categories	%									
Office and Administrative Support Occupations	0.8	0.6	14.1	13.0	36.2	36.4	36.7	36.2	12.2	13.8
Food Preparation and Serving Related Occupations	2.7	1.7	32.6	26.5	43.9	45.9	18.6	23.0	2.3	2.8
Building and Grounds Cleaning and Maintenance Occupations	5.3	3.7	33.3	29.1	45.0	47.7	14.5	17.2	2.0	2.2
Sales and Related Occupations	1.4	1.1	16.8	15.0	39.3	40.7	31.3	32.6	11.2	10.6
Transportation and Material Moving Occupations	3.0	2.3	25.0	20.7	43.9	44.8	25.1	28.5	3.1	3.7
Production Occupations	3.4	2.8	23.6	21.2	45.0	45.3	24.8	27.3	3.3	3.5
Personal Care and Service Occupations	2.1	1.4	21.3	15.9	35.7	36.4	33.9	39.6	6.9	6.6
Installation, Maintenance, and Repair Occupations	2.4	2.7	22.1	18.5	42.0	41.8	30.2	34.1	3.2	3.0
Healthcare Support Occupations	2.2	1.6	12.9	9.7	29.0	27.4	48.7	53.9	7.2	7.4
Education, Training, and Library Occupations	0.1	0.1	3.8	3.2	11.9	11.8	23.0	23.7	61.2	61.1
Construction and Extraction Occupations	4.1	3.1	22.5	18.9	45.1	45.3	25.7	30.2	2.5	2.6
Community and Social Services Occupations	0.3	0.3	3.1	2.4	14.3	13.7	28.2	30.3	54.1	53.3
Management Occupations	1.0	1.2	6.6	4.9	26.2	24.1	32.8	32.9	33.4	36.8
Healthcare Practitioners and Technical Occupations	0.1	0.1	3.3	2.3	10.8	10.8	52.9	53.0	32.9	33.8
Others	5.7	4.6	14.5	12.9	37.6	36.4	28.6	32.1	13.5	14.0
Protective Service Occupations	1.5	0.6	10.7	9.1	37.6	36.0	36.9	41.1	13.3	13.3
Business and Financial Operations Occupations	0.2	0.5	2.2	2.1	15.0	14.1	32.1	30.8	50.6	52.6
Arts, Design, Entertainment, Sports, and Media Occupations	0.5	0.6	5.2	4.8	18.1	18.9	38.3	33.6	37.9	42.1
Computer and Mathematical Occupations	0.3	0.1	3.4	2.7	12.3	13.6	48.2	43.3	35.9	40.4
Architecture and Engineering Occupations	0.3	0.3	3.9	2.6	15.3	12.7	42.1	40.7	38.5	43.7
Farming, Fishing, and Forestry Occupations	11.8	6.4	21.8	21.2	41.1	43.3	19.2	22.3	6.2	6.9
Life, Physical, and Social Science Occupations	0.2	0.0	3.7	2.1	12.7	9.3	23.9	21.6	59.5	67.1
Legal Occupations	0.0	0.2	1.9	0.5	7.5	9.7	29.0	26.4	61.5	63.2
Military Specific Occupations	0.5	0.3	13.6	8.7	42.9	19.9	32.8	39.0	10.1	32.1

Table 10

Adjusted median hourly wage in U.S. dollars by VR major occupation categories at closure, RSA 911, 2008 – 2012

	2008	2009	2010	2011	2012
Office and Administrative Support Occupations	9.6	9.6	9.5	9.2	9.0
Food Preparation and Serving Related Occupations	8.0	8.1	8.5	8.2	8.0
Building and Grounds Cleaning and Maintenance Occupations	8.6	8.6	8.5	8.4	8.3
Sales and Related Occupations	8.6	8.7	8.8	8.4	8.3
Transportation and Material Moving Occupations	9.6	9.6	9.7	9.7	9.5
Production Occupations	9.6	9.6	9.5	9.2	9.0
Personal Care and Service Occupations	8.6	8.6	8.7	8.5	8.5
Installation, Maintenance, and Repair Occupations	10.4	10.4	10.6	10.2	10.0
Healthcare Support Occupations	10.2	10.3	10.3	10.2	10.0
Education, Training, and Library Occupations	13.4	13.4	13.4	12.8	12.0
Construction and Extraction Occupations	12.0	11.8	11.7	11.9	12.0
Community and Social Services Occupations	13.4	13.3	13.3	12.8	12.5
Management Occupations	13.9	13.9	13.5	13.3	13.5
Healthcare Practitioners and Technical Occupations	16.9	17.1	17.0	16.3	15.4
Others	10.7	12.8	13.3	11.7	12.2
Protective Service Occupations	10.7	10.7	10.6	10.2	10.0
Business and Financial Operations Occupations	16.1	16.1	15.9	15.3	15.0
Arts, Design, Entertainment, Sports, and Media Occupations	11.8	12.0	11.7	11.2	11.3
Computer and Mathematical Occupations	15.5	15.4	15.3	15.3	15.0
Architecture and Engineering Occupations	17.4	17.9	17.5	18.4	17.5
Farming, Fishing, and Forestry Occupations	9.6	9.9	9.5	9.2	9.3
Life, Physical, and Social Science Occupations	15.4	16.1	15.6	15.3	15.4
Legal Occupations	16.7	17.1	17.4	17.3	18.0
Military Specific Occupations	10.7	10.7	12.6	13.3	11.6

Table 11

Adjusted median hourly wage in U.S. dollars by individual characteristics, RSA 911, 2008 and 2012

	Office and Administrative Support Occupations		Food Preparation and Serving Related Occupations		Building and Grounds Cleaning and Maintenance Occupations		Sales and Related Occupations		Transportation and Material Moving Occupations		Production Occupations	
	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012	2008	2012
Age												
Transition Age Youth	8.6	8.2	7.8	7.9	8.3	8	8.6	8	8.6	8.3	9.1	9
Adults Aged 25-64	10.6	10	8	8	8.6	8.5	8.8	8.6	10.7	10	9.6	9.3
Older Adults Aged 65 and above	10.2	10	8.9	8	9.2	8.9	10.2	10	10.7	10	10.7	10
Gender												
Male	9.1	8.7	8	8	8.6	8.3	9.1	8.5	9.8	9.6	9.9	9.5
Female	10.2	9.9	8	8	8.3	8	8.6	8	8.6	9	8.6	8.5
Race & Ethnicity												
Non-Hispanic White	9.7	9.3	8	8	8.6	8.3	8.7	8.5	9.7	9.9	9.8	9.5
Non-Hispanic Black	9.6	9	7.8	7.8	8.6	8	8.3	8	9.2	9	8.7	8.5
Non-Hispanic Native American	9.6	10	8	8	8.6	8.5	8.6	8.6	10.2	10	9.6	9.5
Non-Hispanic Other	9.8	9.7	8.6	8.3	8.8	8.7	8.7	8.5	9.5	9.4	9.4	9
Hispanics	9.5	8.5	8.6	8	8.6	8.3	8.6	8	9.6	9.6	9.1	8.8
Type of Disability												
Visual	10.7	10	8.6	8.4	8.8	9	9.2	9	10.7	10	8.7	9
Hearing	11.6	11.3	8.6	8.5	9.6	9.2	10.7	10	12	11.6	12.1	11.3
Orthopedic	10.6	10	8.3	8.3	8.9	8.8	8.8	8.6	11.2	10.9	10.7	10
Developmental	8	8	7.5	7.5	8	8	8	8	8	8	8	8
Substance Abuse	9.7	9.1	8.5	8	9	9	8.6	8.5	10.7	10	10	9.5
Mental Health	9.6	9	8	8	8.5	8.3	8.6	8	9.5	9.1	9.1	8.8
Learning Disability	8.9	8.3	8	8	8.6	8.3	8.6	8	9.1	8.6	9.6	9
Traumatic Brain Injury	9.1	8.6	8	8	8.6	8.5	8.6	9	9	9	9.6	9
Other	9.6	9	8	8	8.6	8.3	8.6	8.3	9.6	9.5	9.4	9
Education												
No Education-Elementary School	8.6	8	7.8	8	8.4	8.3	7.8	7.6	9.1	9.5	8.6	8.5
Secondary School- Special Ed Certificate	8.5	8	7.7	7.7	8.1	8	8.1	8	8.6	8.3	8.6	8.5
High School Grad	9.4	8.7	8	8	8.6	8.3	8.6	8.3	9.6	9.3	9.6	9
Post Secondary-Associate Degree	10.7	10	8.6	8	9	9	9.1	8.5	10.8	10.5	10.7	10
B. A. and above	11.5	11	8.9	9	10.2	9.1	10.7	9.5	10.7	10.5	10.7	10.4