

Closing Sheltered Workshops: An Analysis of Services, Programs, Training and
Experiences Leading to Successful Community Employment Outcomes

A Dissertation

Presented in Partial Fulfilment of the Requirements for the
Degree of Doctorate of Philosophy

With a

Major in Education

In the

College of Graduate Studies

University of Idaho

By

Howard R. Fulk IV

Major Professor: Julie Fodor, Ph.D.

Committee Members: Janice Carson, Ed.D.; Aleksandra Hollingshead, Ed.D.;

Allen Kitchel, Ph.D.; Gwen Mitchell, Ph.D.

Department Administrator: Raymond Dixon, Ph.D.

December 2018

Authorization to Submit Dissertation

This dissertation of Howard R. Fulk IV, submitted for the degree of Doctorate of Philosophy with a Major in Education and titled "Closing Sheltered Workshops: An Analysis of Services, Programs, Training and Experiences Leading to Successful Community Employment Outcomes," has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

Major Professor: _____ Date: _____
Julie Fodor, Ph.D.

Committee Members: _____ Date: _____
Aleksandra Hollingshead, Ed.D.

_____ Date: _____
Gwen Mitchell, Ph.D.

_____ Date: _____
Janice Carson, Ed.D.

_____ Date: _____
Allen Kitchel, Ph.D.

Department
Administrator: _____ Date: _____
Raymond Dixon, Ph.D.

Abstract

Employment is a significant way that people achieve social interaction, financial stability and an increased sense of self-worth. However, for many individuals with intellectual or developmental disabilities, employment may also mean earning less than minimum wage, interacting only with coworkers that also have disabilities and oftentimes working at job sites separated or secluded from the public.

State and federal guidelines permitting segregated employment for people with disabilities are coming under increasing scrutiny. In January 2012, self-advocates and supporters of people with disabilities formally challenged this form of segregation in an Oregon US District Court. In October of 2015, the State of Oregon agreed to stop these unfair employment practices and help approximately 4,900 individual's transition from segregated work settings to jobs in competitive settings within local communities.

To help evaluate and determine what services, training and educational experiences were most likely to lead to successful competitive employment outcomes for individuals leaving sheltered work settings; this study followed those individuals impacted by this court decision as they progressed from segregated work through their transition into community employment.

This study found past services that had taken place in true community settings, provided exposure to real employment and working conditions, and provided the individual with a means of securing transportation within their communities had the highest direct impact on successful transitions. Equally, it was found services that took place in artificially controlled, group or predominantly social settings tended to increase the difficulties that an individual faced when trying to gain employment in the real world.

Acknowledgements

I would like to extend my thanks and sincere appreciation to the many people that have encouraged me as I approach this milestone in my life. This dissertation is not just a culmination of my work, but is a reflection of all of the teachers, professors, academicians, mentors, and advisors that have pushed me to expand myself intellectually, academically and personally.

Specifically I want to thank the educators that challenged me to continue my education beyond a graduate degree and push onwards towards this PhD: Dr Elizabeth Fredericksen and Dr Bayard Gregory.

I wish to extend a very special thank you to my dissertation advisor, Dr Julie Fodor. Dr Fodor humored my countless questions, revisions and challenges to teach me that less is often more. Additionally, a heartfelt thank you to my committee members; Janice Carson, EdD, Alexandra Hollingshead, EdD, Allen Kitchel, PhD, and Gwen Mitchell, PhD.

This research would not have been possible without the professional support of my colleagues, supervisors and mentors. Thank you all for taking the time and making the effort to push me, guide me and most of all, mentor me along the way. I hope that this work will lead to helping improve the lives of people with disabilities.

To everyone that has helped me, believed in me, and has been a part of this journey; thank you.

Dedication

There is no possible way I could ever thank my family enough for the support, patience understanding and guidance that they have blessed me with during my time in this program. The sacrifices they have made are both innumerable and incalculable, and while saying thank you is never going to be enough, thank you. This work is dedicated them.

To my children, thank you for your patience, support and acceptance while I worked both professionally and academically towards this goal. To my wife, thank you for your sacrifices; mentally, emotionally, physically and materially as I completed this journey. I am forever in your debt.

To everyone that has offered support, shared knowledge, provided wisdom, opened doors or offered inspiration and encouragement, thank you as well.

Table of Contents

| | |
|---|-----|
| Authorization to Submit | ii |
| Abstract..... | iii |
| Acknowledgements..... | iv |
| Dedication..... | v |
| Table of Contents..... | vi |
| List of Figures..... | ix |
| List of Tables | x |
| Chapter 1: INTRODUCTION | 1 |
| Concept of Normalization within the Workplace..... | 4 |
| Problem Statement..... | 5 |
| Purpose of Study..... | 6 |
| Research Questions..... | 7 |
| Chapter 2: LITERATURE REVIEW | 9 |
| Normalization within Disability Employment..... | 10 |
| Ideological Trends of Employment for People with Disabilities | 12 |
| The Importance of Employment..... | 16 |
| Legislative and Administrative Interventions..... | 19 |
| The Americans with Disabilities Act..... | 20 |
| Ticket to Work..... | 22 |
| Transition Services Provided Through Schools | 25 |
| Transportation..... | 28 |
| Behavioral Health Issues and Employment..... | 30 |
| Criminal Histories..... | 32 |
| Employer Engagement..... | 33 |
| The Employment First Movement..... | 36 |
| Current Barriers to Employment for People with Disabilities..... | 38 |
| Sheltered Work Facilities | 41 |
| Lane versus Brown Court Challenge to Sheltered Facilities..... | 44 |
| Definitions Required for this Study..... | 45 |
| Significance of this Study..... | 47 |

| | |
|--|-----|
| Chapter 3: METHODOLOGY | 49 |
| Data Acquisition | 49 |
| Population Sample | 51 |
| Inferential Statistics | 53 |
| Data Sets | 54 |
| Agent Based Modeling | 55 |
| Chi-Square Automatic Interaction Detection | 58 |
| Testing for Significance of Variables | 62 |
| Testing for Interaction and Independence | 64 |
| Testing for Statistical Significance | 65 |
| Chapter 4: RESULTS | 70 |
| Beneficial Support Services | 71 |
| Detrimental Support Services | 76 |
| Support Services neither Beneficial nor Detrimental | 79 |
| Potentially Beneficial Services | 83 |
| Additional Support Services Analysis via Employment Outcome Systems Survey | 87 |
| Demographic Data | 90 |
| Demographic Data That Appears to Influence Employment Outcomes | 90 |
| Demographic Data Supports Intensity Scale: Positive Influence | 90 |
| Demographic Data VR Assessed Track Level: Positive Influences | 92 |
| Demographic Data Education Level: Positive Influence | 94 |
| Demographic Data VR Office: Positive and Negative Influence | 95 |
| Demographic Data County of Residence: Positive and Negative Influence | 97 |
| Demographic Data Citizenship: Potentially Beneficial | 100 |
| Demographic Data That Does Not Appear to Influence Employment Outcomes | 101 |
| Demographic Data Disability Impairment: Not Influential | 101 |
| Demographic Data Diagnosis: Not Influential | 103 |
| Demographic Data Individual Age: Not Influential | 105 |
| Demographic Data Gender: Not Influential | 105 |
| Demographic Data Heritage: Not Influential | 106 |
| Demographic Data Primary Language: Not Influential | 107 |

| | |
|--|-----|
| Demographic Data Living Situation: Not Influential | 108 |
| Demographic Data Marital Status: Not Influential..... | 109 |
| Demographic Data Guardianship: Not Influential..... | 110 |
| Chapter 5: DISCUSSION..... | 112 |
| Potentially Positive Indicators Identified..... | 117 |
| Potentially Negative Indicators Identified..... | 118 |
| Support Services Neither Positive nor Negative Identified..... | 120 |
| Study Definition of the Ideal Candidate | 121 |
| Limitations of this Work..... | 122 |
| Recommendations for Future Study | 123 |
| Conclusion | 124 |
| REFERENCES | 126 |
| APPENDIX A: Glossary of Terms..... | 134 |
| APPENDIX B: Description of Data Sets and Variables | 147 |

List of Figures

| | |
|---|-----|
| Graph 4.1 Overall ODDS Beneficial Services | 76 |
| Graph 4.2 Overall ODDS Detrimental Services | 79 |
| Graph 4.3 ODDS Services w/ No Impact | 83 |
| Graph 4.4 Overall ODDS Potentially Beneficial Services | 87 |
| Graph 4.5 Tier Levels and Successful Outcomes | 92 |
| Graph 4.6 VR Track Level and Successful Outcomes | 94 |
| Graph 4.7 Education Level and Successful Outcomes | 95 |
| Graph 4.8 VR Branch and Outcomes | 97 |
| Graph 4.9 County of Residence | 100 |
| Graph 4.10 Disability Impairment and Successful Outcomes | 103 |
| Graph 4.11 Diagnosis Successful Outcomes | 104 |
| Graph 4.12 Participants Ages vs Employment Outcome | 105 |
| Graph 4.13 Gender Success Rate | 106 |
| Graph 4.14 Participant Heritage and Success Rate | 107 |
| Graph 4.15 Living Situation Successful vs Unsuccessful Outcomes | 108 |
| Graph 4.16 Living Situation Successful Outcomes | 109 |
| Graph 4.17 Marital Status and Successful Outcomes | 110 |
| Graph 4.18 Guardianship and Successful Outcomes | 111 |

List of Tables

| | |
|---|-----|
| Table 4.1 Beneficial ODDS Services | 74 |
| Table 4.2 Detrimental ODDS Services..... | 77 |
| Table 4.3 ODDS Services with No Statistical Impact..... | 82 |
| Table 4.4 Potentially Beneficial ODDS Services | 85 |
| Table 4.5 EOS Data | 89 |
| Table 4.6 Individual Tier Breakout | 92 |
| Table 4.7 VR Track Level and Successful Outcomes | 93 |
| Table 4.8 Education Level..... | 95 |
| Table 4.9 VR Branch Office Outcomes..... | 96 |
| Table 4.10 County of Residence..... | 99 |
| Table 4.11 Citizenship..... | 100 |
| Table 4.12 Disability Impairment..... | 102 |
| Table 4.13 Diagnosis Successful Outcomes..... | 104 |
| Table 4.14 Gender Breakout..... | 105 |
| Table 4.15 Success Rate by Participant Heritage | 106 |
| Table 4.16 Primary Language Spoken..... | 107 |
| Table 4.17 Primary Language Read | 107 |
| Table 4.18 Living Situation | 108 |
| Table 4.19 Marital Status..... | 109 |
| Table 4.20 Guardianship..... | 110 |

CHAPTER 1: INTRODUCTION

Where an individual works is one of the primary ways in which people structure their lives. A person's work "provides opportunities to advance, opportunities for social support systems, and opportunities for self-expression and self-determination; all necessary components of psychological health" (Blustein, 2008, p. 230; Neff, 1985, p.3).

For individuals with disabilities, employment may be particularly beneficial as people with disabilities tend to experience far greater "social isolation, stigma, and financial burdens when compared to individuals without disabilities" (Blustein, 2008, p. 230; David Strauser, O'Sullivan, & Wong, 2010, p. 2001). Moreover, when people with disabilities are unable to work, they will often become "isolated and experience a decrease in self-esteem related to their diagnosis, disability or chronic health condition" (Winsor & Butterworth, 2008, pp. 166-168).

Numerous studies suggest that participating in gainful employment may offset some of these negative experiences by providing opportunities for social interaction as well as offering much needed health and retirement benefits (Neff, 1985, pp. 2-4). According to Neff, the work environment offers opportunities that will enable a person to "interact with others, perform rituals and customs that are meaningful, and provide opportunities for growth and social interaction" (1985). Furthermore, it has been demonstrated that work activities sustain physical and mental health (Blustein, 2008, p. 231).

A person's employment plays a significant role in how individuals perceive their own sense of value in terms of community inclusion, economic self-sufficiency and personal satisfaction. As an example, one of the most common things for a person to do when meeting an individual for the first time is to ask that person what they do. Therefore, our

jobs serve not only to help define who we are; they play a crucial role in establishing structure and hierarchy within our society.

At the individual level, employment promotes “a wide variety of physical and psychological benefits as well as offering numerous aids to society as a whole” (Szymanski, Enright, Hershenson, & Ettinger, 2003, pp, 92-94). Even the World Health Organization included the importance of productive employment within its functional classification model in 2001 and reported that employment is frequently associated with “greater self-esteem, life-satisfaction and an overall sense of well-being” (Lidal, Huynh, & Biering-Sørensen, 2007, p. 1341).

For individuals with intellectual and developmental disabilities however, the expectation of completing their education and transitioning to a productive position within America’s employment sector is often far from their everyday reality. Data from the 2013 Supplemental Security Income Annual Statistical report shows that of the almost five-million individuals with disabilities between the ages of 18 and 64, less than 300,000 (5.9%) were employed (SSI, 2013).

In 2011, Newman et al. reported that only “38% of young adults with intellectual or developmental disabilities were able to find employment up to eight-years after leaving high school” (Newman et al., 2011, pp. 3000-3004). Additionally, research shows that many individuals with an intellectual or developmental disability live at or below the poverty line (National Organization on Disability, 2010).

The United States House of Representatives Committee on Education and Workforce Development released a report in 2015 stating, “The majority of individuals with disabilities

earn less on average, are more likely to work part-time or in temporary positions and are less likely to work in technical or managerial positions than their peers without disabilities.”

Moreover, integrated employment rates for individuals with more significant disabilities have remained consistently low and even appear to be declining within some populations. In a 2014 research study, Dr. John Butterworth found a troubling 6.2% decline in integrated employment placements for individuals with intellectual and developmental disabilities that had or were receiving day supports from state agencies, with only 18.4% of this population currently working in integrated employment (Butterworth, Marrone, & Hall, 2014, p. 7). Additionally, many of those individuals that had been able to find employment were working in sheltered or facility-based employment locations (Winsor & Butterworth, 2008, pp. 166-168).

Sheltered programs are generally segregated, facility based enterprises that are “attended by adults with disabilities as an alternative to working in the open labor market” (Flores, Jenaro, Begona Orgaz, & Victoria Martín, 2011, p. 134). The intent of the workshop is to provide vocational skills training or work experiences where the majority of the activities encompass relatively simple activities such as “assembling piece work, conducting recycling activities, packing, woodworking, manufacturing, servicing, or sewing” (Migliore, Mank, Grossia, & Rogan, 2007, p. 6). The majority of individuals attending these programs are those most likely to have been diagnosed with severe or challenging intellectual and developmental disabilities therefore, “these environments often reflect a very non-typical, non-inclusive and segregated environment” (Migliore et al., 2007, p. 6). Historically, adults with intellectual and developmental disabilities within a sheltered setting, were unlikely to ever transition into more inclusive competitive employment (Schur, Kruse, & Blanck, 2005,

pp. 9-13). This is despite the tenet that “these types of settings serve to prepare individuals with disabilities for competitive employment” (Cimera & Burgess, 2011, p. 173).

Concept of Normalization in the Workplace

The conceptual framework of this study is predicated upon the theoretical underpinnings of *normalization* in the workplace. The concept of "normalization" was introduced in Scandinavia in the 1950s and suggests that people with disabilities should have access to supports so that they can experience patterns and conditions of everyday life that are as similar as possible to those of mainstream society (Beirne-Smith et al. 2006). While normalization as a concept itself is not new, the movement towards supporting equal and equitable opportunities for individuals with an intellectual or developmental disability in the workplace is relatively recent.

In fact, most legal challenges to non-segregated workplaces for workers with a disability can only be traced back to the Olmstead US Supreme Court Decision in 1999 (Spreat, 2017). This decision stated that unjustified segregation for a person with a disability is discrimination, and that services for a person with a disability must take place in the most integrated setting appropriate. Therefore, while the legal framework challenging segregated workplaces for people with a disability is decidedly contradictory, it does lean heavily towards the belief that a blended integrated environment is more beneficial to the participant than the segregated surroundings provided by the sheltered workshop.

At the time of this study, states across our nation are facing numerous legal challenges as they struggle with balancing the need for normalization in the workplace, with providing support services to the more than 228,000 people with intellectual and developmental disabilities who are currently working in segregated settings (Beard, 2015).

The cornerstone of this paper is centered upon the belief that normalization is a human right, not just a concept. Accepting that people with disabilities can and should seek employment within our communities, just like everyone else, is a fundamental tenant of this right.

In order to ensure a successful transition for the more than 200,000 individuals out of sheltered workshops and into employment within our neighborhoods and communities, it is imperative that we understand how best to leverage the training, education and skills that they have experienced while working in the workshop environment. This study lays the groundwork for understanding how best to serve this population and seeks to outline strategies, services and methods to aide in expediting this process.

Problem Statement

Previous academic work has often examined the benefits of employment and particularly the benefits associated with employment opportunities for individuals with intellectual and developmental disabilities. However, little research has been directed towards identifying what strategies, services and training has been beneficial in assisting individuals with disabilities to succeed in integrated competitive employment settings.

The changing perception of disability rights and growing expectation of normalcy in our country has placed a spotlight upon the need to transition individuals out of sheltered workshop facilities and into 'real work' taking place at 'real jobs' within community employment settings. Unfortunately, little if any scholarly work has yet to examine the criteria surrounding the types of programs, training, education and experiences that are common to individuals that have left the sheltered environment and successfully made the transition into these integrated employment positons. This lack of knowledge has created a

vacuum in which transition has continued to take place without any real understanding of why some individuals are able to successfully secure jobs in their communities, while others often choose to leave the workshop and return to adult day service or other non-employment related services.

If we are to understand what factors are most likely to predicate a successful employment outcome, employment professionals must understand what types of services and individual experiences have a high probability of preparing a program participant for a successful outcome. This study was created as a way to study successful and unsuccessful employment outcomes in a real-world environment, and to provide a framework from which to begin to understand these experiences. As Chan, Taryvdas, Blalock, Strauser and Atkins (2009) wrote, “rehabilitation counseling must [begin to] embrace an evidence-based practice paradigm to remain a vital and respected member of the future community of professionals in rehabilitation and mental health care” (p. 114).

Purpose of the Study

This study was developed to examine commonalities in services, diagnoses, education and training amongst former sheltered workers who have been able to successfully transition to community employment. Furthermore, these same indicators were also identified for those individuals that were unable to find or maintain integrated competitive employment upon leaving the sheltered workshop environment. Research was then conducted on both groups to attempt to identify if some preexisting services, training or education increased the likelihood that the person would be able to successfully transition into community-based employment. In addition, these same factors were evaluated to try to

determine if some services were potentially hindering a person's ability to go to work in a non-segregated setting.

This research is both significant and timely as not only does it address an under researched area in the disability policy community, this study has taken place during a period of unprecedented change in federal and state disability policy. In 2015, the *National Advisory Committee on Increasing Competitive Integrated Employment for Individuals with Disabilities* reported that approximately 228,600 individuals were working in sheltered employment. If federal regulators move to eliminate facility-based employment as anticipated, it is imperative that policy makers, researchers and academicians understand the impact this will have on other disability supports programs.

This study seeks to provide a foundation to help states and disability service providers better understand the pathway out of segregated employment. Furthermore, for those individuals with disabilities interested in seeking employment in their communities, this work will present a foundation for helping to guide that person through the myriad of available services and programs provided through the state and federal support systems.

Research Questions

This study will help provide an understanding of what should occur in existing programs to help facilitate a successful transition for individuals from the sheltered environment into one of community inclusiveness, to identify trends that have historically led to unsuccessful outcomes, and to offer recommendations to improve these services.

To answer this need, the following research questions were proposed for this study.

1. What state funded employment services are most likely result in successful outcomes for individuals that had formerly been participants in sheltered workshop programs?

2. What demographic commonalities exist between individuals that are able to successfully transition into community employment following their transition from sheltered employment?

3) What state funded programs or services potentially result in negative employment outcomes or are detrimental to an individual's successful transition to community employment following their transition from sheltered work?

Hypothesis: Individuals with exposure to previous community work services are more likely to be successful in obtaining and maintaining community integrated employment following their departure from a sheltered work facility.

Chapter 2: Literature Review

This chapter examines the existing literature, scholarly work and public policy that have guided employment for individuals with disabilities in the United States over the last half-century. Starting with a discussion on the overall importance of employment, this section reviews several of the most important legislative and programmatic milestones in the field of disability employment while presenting some of the current challenges faced by individuals with disabilities as they integrate into community employment.

This section will provide a review of the current best practices surrounding the methodologies identified to engage and educate employers, as well as the rise of the Employment First movement as a strategy at the local, state and federal levels to shift the existing paradigm of putting people with disabilities into programs rather than workplaces. Additionally, the literature review will offer an assessment of barriers that continue to remain as obstacles to fully integrated work settings and will attempt an exploration into the pros and cons of sheltered work facilities. Finally, the significance of this research will be presented.

The term *people with disabilities* collectively refers to a very diverse population. While it is frequently used as a categorial assessment, it is crucial to understand that disabilities may take many forms each offering their own challenges. What impacts one person may not affect another the same way, even amongst individuals with the same diagnosis. Disabilities are generally classified into one of four broad categories: Physical, Intellectual, Psychological and Neurodevelopmental. Each of these classifications may present their own unique barriers when a person seeks to enter the world of work.

According to the World Health Organization, a disability may be generally described as having three dimensions: An impairment in a person's body or mental structures or functions. An activity limitation, such as difficulty seeing, hearing, walking or problem solving, or the person has a restriction that affects normal daily activities such as working or engaging in social and recreational activities.

While this study has focused predominantly on people with intellectual and developmental disabilities, it should be noted that individuals with physical and psychological disabilities participate in sheltered workshop programs as well. As such, disabilities other than those of an intellectual or developmental nature have been discussed within the sheltered workshop framework where appropriate throughout this work.

Normalization within Disability Employment

It has been said, "One of the most striking features of human beings is their diversity" (Heidkamp, et al., 2010, p.8). Yet, within our society, individuals with intellectual and developmental disabilities are oftentimes viewed as different and are approached with both diminished expectations and understanding. In this context, the social meaning of "normality" becomes conflicted (Joost & Bieling, 2012).

There are connotations often associated with the term "disability" and these are usually rather negative. While our society has gradually become more accepting of people with disabilities, the overall degree of negativity often stems from a lack of knowledge, ignorance and uneasiness (Campbell, 2008; Clear, 1999).

In Western thought, it is perhaps taken for granted that normal human beings are healthy, independent, and rational. Many theories in politics and philosophy, as well as medicine rely on this assumption. In medicine, normality traditionally "refers to a person's

condition aligning with that of a healthy patient” (Litt, 2014). Normality in this realm could then be defined as able-bodied (Shakespeare, 2007).

In what is generally referred to as a ‘medical model,’ a person without a disability is considered “normal” whereas a person with a disability is viewed as abnormal. These labels, normal and abnormal, create negative perceptions towards individuals with disabilities. It is from this medical model of normality that much of our nation’s disability support programs is derived.

Looking specifically at normalcy in employment, historically in our country if an individual has an intellectual or developmental disability, the expected path following completion of schooling is to enter into a social services program where the emphasis was on limited skill building or socialization activities. Conversely, for other students, the ‘normal’ path is to be either one leading to employment directly out of high school, or following their college or vocational training.

Traditionally, if employment was considered at all for a person with an intellectual or developmental disability, it would most likely take the form of a segregated setting where the person would work with other individuals with disabilities and would involve little interaction with those not part of this program. Supporters of this philosophy argue that segregated settings provide safety for the person, as well as serving to prevent the person from potential harassment or embarrassment. Yet, clearly this distinction violates the notion of normal.

Today in the United States, the trend is for individuals with disabilities to live in inclusive community settings, with appropriate supports to facilitate their experience (Beirne-Smith et al. 2006). Assisting individuals with disabilities as they transition from

institutional to community settings requires attention to many things, including appropriate housing and co-residence selection, negotiation of staff needs with service users' needs, organizing a culture of engagement in the home and in the community, and focus on quality of life (Beadle-Brown et al. 2007). This same approach should also hold true as we seek to close segregated sheltered workshops and assist these workers as they transition to community-integrated jobs.

The introduction of *employment first* policies has begun to change the focus of school transition programs for people with disabilities. Prior to employment first, transition programs often focused on helping students with disabilities move into adult assistance programs rather than preparing them for employment opportunities along with their classmates. Employment first has sought to create a model where paths leading to employment are considered as the primary choice for individuals with disabilities, rather than assuming that adult assistance programs are the outcome of choice. This shift in thinking has made important contributions to raising expectations, improving outcomes, and increasing self-sufficiency for individuals with intellectual and developmental disabilities. The growing understanding and acceptance of these concepts has led to the beginnings of a movement towards redefining normalcy and creating an environment where inclusion is considered routine.

Ideological Trends of Employment for People with Disabilities

Within the United States, the ideological belief system surrounding employment opportunities for individuals with disabilities has evolved in an almost cyclical fashion. During the early 1800s, there was a strong movement within society to try to rehabilitate, train and integrate persons with disabilities into “normal” life (Beirne-Smith et al., 2006).

As urbanization occurred during the latter half of the 1800s, these early attempts to integrate individuals into communities began to collapse. Individuals with disabilities struggled to adapt to an industrializing, urbanizing nation where employment increasingly depended on intellectual ability and less so on physical ability.

It was during this period that the notion of training, rehabilitation and reintegration for those with a disability proved to be more challenging than anticipated. While people with disabilities could learn skills, they were often unable to attain society's ideal of "normalcy." The systematic community programs that had proven successful prior to industrialization decreased and institutionalization became the recommended method of serving individuals with disabilities (Beirne-Smith et al. 2006; Radford 1991; Reilly 1987).

At the turn of the 20th century, medical professionals routinely directed individuals with disabilities into institutional settings to protect 'normal' society from them. People with disabilities, particularly those with intellectual and developmental disabilities, were considered as a threat to a healthy population. To prevent those with a disability from having children "custodial institutions became the most important means by which the disabled were removed from a society in which they were perceived as a genetic threat and placed in isolated environments, completely segregated by gender" (Radford 1991).

As scientists, doctors and researchers sought ways to better identify individuals with disabilities, screening tests and scoring instruments for evaluating a person's cognitive abilities were introduced. For the past century, the development of these psychological tests and adaptive functioning ratings have served as a double-edged sword. While these tests have improved identification of individuals with disabilities and served as a gateway for

specialized school services, in many cases they have led to labeling, stigmatization, segregation and institutionalization.

As an example, in 1905 Alfred Binet and Theordore Simon developed a test for identifying schoolchildren that could possibly benefit from special services (Beirne-Smith et al. 2006). The introduction and rapid acceptance of the Binet-Simon test, as well as other forms of intellectual screening and evaluation testing, served to make intellectual disability suddenly seem more prevalent than previously believed. While these tools served the intended purpose of helping students receive the specialized services they needed, they also identified even mildly disabled people who would likely not have been given a diagnosis otherwise (Beirne-Smith et al. 2006).

As the population of individuals diagnosed as disabled began to increase, state and federal officials were called upon to recognize the need to define and establish rights for this population. In the early 1900s through the beginning of the 1950s, legislation began to appear that offered some types of support services and to lay the foundations for disability support programs. In 1911, New Jersey became the first state to provide specifically designated education for students with intellectual disabilities (Beirne-Smith et al. 2006). Much of their work would later be used to form the basis for modern special education programs.

The need for specialized work training and rehabilitation programs began with the Vocational Rehabilitation Act passed in 1920. This law came about following the return of hundreds of thousands of wounded soldiers returning from WWI and truly started the movement to protect the rights of workers people with disabilities. Equally, the Social Security Act (1935) built upon this start and signaled a shift towards new supportive

attitudes towards people in need (Radford 1991; Reilly 1987). The Social Security Act created a system of benefits for retired workers, benefits for victims of industrial accidents, unemployment insurance, aid for the blind, and the physically handicapped.

By the 1950s, advocacy groups began to appear calling for increased oversight of disability programs, additional assistance for people with disabilities and better programs for children requiring more specialized education needs. In 1950, the National Association of Parents and Friends of Mentally Retarded Children became one of the first advocacy groups specifically created solely for children and families with disabilities. This organization, now known as The Arc, continues to provide services, coordinates research, and actively lobbies on behalf of individuals with disabilities. By 1952, 46 of the 48 states had enacted legislation for educating intellectually disabled children. Interestingly however, severely and moderately disabled children continued to remain excluded from these programs.

In the early 1960s, President Kennedy established the President's Panel on Mental Retardation (now the President's Committee on Intellectual Disabilities). This act created a national agenda for policy, research, education, and services while President Johnson's War on Poverty and establishment of the Head Start program sought to address some of the perceived environmental causes of intellectual disability.

The reauthorization of the Vocational Rehabilitation Act in 1973, greatly expanded upon the scope of services offered under the original program. Just as much of the original program had been forged following the influx of disabled warriors returning from the First World War I, the number of returning Vietnam Veterans demonstrated the need for additional assistance for people with disabilities in America's workplace. While the Vocational Assistance Act was based originally on the recognized need for programs to

support our nations veterans, it is important to understand that this program also supported anyone with a disability or needing assistance with gaining, retaining or obtaining employment in their local communities.

In 1975 the Education for All Handicapped Children Act secured a free public education for children with intellectual disabilities. This landmark piece of legislation became the bedrock for the federal governments involvement with education for students with disabilities and finally offered a real alternative to institutionalization for school aged children with disabilities.

With the passage of the United Nations *Standard Rules on Equalization of Opportunities for Persons with Disabilities* in 1994, international standards were finally created for programs, policies and laws for those with disabilities. While these standards are non-binding, they do provide an expectation for how programs for people with disabilities should be administered and offer recognition for the importance of equality, normalization and equal opportunity.

Overall, the last forty years have witnessed an increased focus on early intervention, community-based rehabilitation, human rights and often much needed legislation. Much of the more recent legislation has stressed the need for deinstitutionalization and community integration (Beadle-Brown et al. 2007).

Importance of Employment

Many studies have postulated that for persons with disabilities, employment is one of, if not the, single most important ways in which an individual can contribute to and participate in their community. It has equally been argued that for a person with a disability,

full community integration is achieved only when that person “is able to work independently in an inclusive, community-based position” (Janssen, de Jonge, & Nijhuis, 2001, p. 257).

In addition to the psychological benefits gained from being a productive and engaged member of their community, the impact on physical well-being that employment offers cannot be understated. For people with disabilities full time employment has been shown to improve quality of life, promote recovery and rehabilitation, minimize the harmful physical and mental effects of long-term sickness and reduces the risk of long-term incapacity (Waddell & Burton, 2006). Additionally, people recover from sickness quicker and are at less risk of long-term illness and incapacity when employed and working regularly (Urtasun & Nunez, 2018).

The Royal College of Psychiatry in England states that employment significantly reduces a person’s risk for suicide, improves physical well-being and increases an individual’s sense of personal identity and self-achievement. Moreover, the College also stated that unemployed individuals are between four and ten times more likely to suffer from depression and anxiety (2018).

The adverse effects on mental and physical health from being unemployment or even underemployed has also been linked to other harmful behaviors such as “unhealthy eating habits, higher instances of smoking and increased alcohol consumption” (NIH, 2012). It can then be logically inferred that these negative coping mechanisms further contribute to the risk of chronic disease and the associated increased health care needs and costs.

A 2009 study conducted by the US Department of Health and Human Services found that individuals employed full-time reported lower levels of stress and depression, healthier eating habits, greater physical activity and lower levels of smoking and drinking. This study

also reported that those respondents that were unemployed or underemployed fell on the unhealthy end of all measured psychological and behavioral factors, while individuals employed part-time fell somewhere in the middle (HHS, 2009).

Unemployment leads to increases in smoking and alcohol use (Hammarström, 1994; Hammarström & Janlert, 2002; Mossakowski, 2008), somatic symptoms or ailments (Grayson, 1989; Hammarström & Janlert, 2002), hospitalization (Eliason & Storrie, 2009), and risk of early death (Lundin, Lundberg, Hallsten, Ottosson, & Hemmingsson, 2010; Roelfs, Shor, Davidson, & Schwartz, 2011). Furthermore, research offers that these negative health behaviors (e.g., binge eating, smoking, drinking) may be used as coping mechanisms for stress, anxiety, and depression (Harrington et al., 2006; Witkiewitz et al., 2011).

A substantive body of work exists to support these reports. Further studies demonstrating that unemployment leads to increased anxiety and depression, as well as negative and potentially harmful psychiatric symptoms, have been well-documented (Dooley, Catalano, & Wilson, 1994; Hammarström & Janlert, 2002). Evidence also supports that increased levels of “poverty, stress, and lowered self-esteem are directly tied to the relationship between employment and health outcomes” (Bambra, 2010; Bartley, 1994; Kasl & Jones, 2007).

In light of these studies and the documented high rates of unemployment and underemployment for people with disabilities, the need for employment opportunities for those with a disability is crucial. Yet, the majority of individuals with developmental and intellectual disabilities continue to remain either “unemployed, underemployed, or employed in segregated workshops” (Rusch & Braddock, 2004, p.237; Yamaki & Fujiura, 2002, p. 132).

Legislative and Administrative Interventions

In the United States, legislation for increasing employment opportunities for people with disabilities has been an almost evolutionary like process. A perfect example is the Rehabilitation Act of 1973. This legislation is often considered by many scholars as the foundational cornerstone of the disability employment movement. The passage of the Rehabilitation Act formally guaranteed various rights to individuals with disabilities, especially regarding their access to federal programs such as Vocational Rehabilitation.

Major revisions were made to the 1973 Rehabilitation Act that significantly increased the number of people eligible for service under this program in 1986, while further refinement to the Rehabilitation Act occurred in 1992. The later update created amongst other things the Statewide Independent Living Councils. Additionally, these revisions provided special emphasis towards supporting individuals with disabilities that were interested in pursuing self-employment and small business opportunities in their local communities. This act further formally prohibited discrimination towards people enrolled in federally funded programs and increased the availability of research and training programs for individuals with disabilities.

The most recent legislation specifically addressing disability employment at the national level was the 2014 Workforce Innovation and Opportunity Act (WIOA). This legislation was specifically intended to improve the nation's public workforce development system by helping individuals with disabilities achieve community employment and to assist employers hire and retain skilled workers by removing barriers to their employment. Many of the changes impacting the desegregation of sheltered workshops and the elimination of less than minimum wage pay for workers with disabilities stems directly from within this

piece of legislation. As author David Strauser wrote “the WIOA legislation has been specifically instrumental in achieving the successes we have today (Strauser, 2014, p. 42).

The Americans with Disabilities Act

The Americans with Disabilities Act (ADA) is often regarded by proponents as the most significant piece of legislation ever to occur in the field of disability rights, as well as an important tool in leveling the playing field for individuals with disabilities who want to work. If a person is otherwise qualified, the ADA requires employers to disregard a person’s disability when considering their eligibility for employment. Additional mandates include that employers provide equal opportunity workplaces for all employees and that reasonable accommodations are made to ensure those with a disability can perform essential functions of a job if they are otherwise qualified.

The expectation under the ADA is that employers are to provide “reasonable accommodations that are necessary for employees with disabilities to enjoy the benefits and privileges of employment to an extent equal to that enjoyed by similarly-situated employees without disabilities” (Equal Employment and Opportunities Commission, 1999). Federal administrative rule defines reasonable accommodations as “any change in the work environment or in the way things are customarily done that enable an individual with a disability to enjoy equal employment opportunities”(Equal Employment and Opportunities Commission, 1999, p. 1). Refusal by an employer to make reasonable accommodations for a qualified job applicant with a disability that results in “denial of an employment opportunity constitutes unlawful employment discrimination” (Bruyere, von Shrader, Coduti, & Bjellend, 2010, p. 49).

Unfortunately, there exists many misunderstandings about the scope of what is required by employers under the ADA. Detractors try to frame this Act as an unfair and often biased attempt by persons with disabilities to force businesses to make costly changes to their business infrastructure or to require employers to hire people with disabilities at the exclusion of other qualified individuals. These protests have resulted in recent attempts to rescind or dilute the protections created under this law. Thus far, these efforts while having gained considerable publicity, have not obtained serious consideration by most lawmakers. It does serve as a reminder however, that the fight for disability rights is an ongoing struggle and the need for continued research, advocacy and increased awareness and understanding remain.

It is important to clarify that within the protections afforded under this framework, that if a job applicant with a disability can perform the essential functions of the job, an employer is not *required* to hire that individual if there is another individual applying for the job with or without a disability who is equally or more highly qualified. Therefore, an individual with a disability “who is not hired for a position due to an inability to meet the standard of performance for the essential functions set by the employer is not viewed as a victim of discrimination by the ADA” (Rubin & Rossler, 2008, p. 5).

It is equally important to understand that the ADA does not require most employers to provide accommodations if those accommodations create an undue hardship on the employer. The ADA then defines an undue hardship as any action that creates “significant difficulty or expense” for an employer related to “the size of the employer, the resources available to the employer or to the nature of the employers operation” (Equal Employment and Opportunities Commission, 1999, p. 2). Constraints of difficulty, cost, size, and resources

have marked implications as to what meets the criteria as a *reasonable accommodation* and vary from employer to employer.

Ticket to Work

In 1999, the Social Security Administration (SSA) launched *Ticket to Work* (TTW) as “an attempt to provide greater employment opportunities for individuals receiving Social Security Disability Benefits” (Prenovitz, 2012, p. 3). Ticket to Work amends existing rule language so that program beneficiaries can engage or attempt to engage in employment activities while still receiving health care and monetary benefits. This is significant, as historically, SSA guidelines specifically required that an individual be unable to engage in employment activities to qualify for benefits.

Under the Ticket to Work Program, those individuals receiving Social Security Disability Insurance (SSDI) cash benefits and entering into gainful employment will continue to be allowed to received benefits for a predetermined period. These benefits will end only when the beneficiary reaches a level of earnings known as a “Substantial Gainful Activity” (SGA). In 2017, the monthly SGA amount for statutorily blind individuals was \$1,950. For non-blind individuals, the monthly SGA was \$1,170.

In addition to removing the previous requirement that a person be fully unable to work in order to be eligible for SSDI benefits, another reason this is noteworthy is that by establishing a relatively significant ceiling in regards to monthly income, a person with disabilities may now be able to engage in trial or part time work in order to evaluate if they are able to do so without risk of losing their health and monetary benefits. Furthermore, people with disabilities can also use this program to work in part-time situations as they build up their stamina or capacity to engage in more strenuous work positions.

As an additional incentive, when deciding whether an individual is exceeding the SGA threshold, the SSA does not include any income obtained from non-work sources (e.g., interest, investment, and gifts) (Social Security Administration, 2012). Individuals who receive both SSDI and Medicare assistance may also be able to keep their Medicare coverage for at least 8.5 years after returning to work under other provisions of the Ticket to work program rules.

For participants eligible to receive both SSI and SSDI benefits concurrently, section 1619(b) allows those individuals that depend on their Medicaid services in order to work, to keep that coverage as long as their annual earnings from work are below state-specified thresholds. In the case in which a beneficiary's earned income is high enough to disqualify them from coverage under 1619(b), many states will allow the purchase of Medicaid coverage at affordable rates through "Buy-In" programs (Social Security Administration, 2012).

As this can be an exceptionally complex program to understand and navigate, most states offer free counselling programs for people desiring an opportunity to work and who are concerned about the potential impact employment income may have on their benefits. These counseling programs can help the person understand additional programs such as a section 529(A) ABLE savings account that may allow the beneficiary to earn even more money and work to potentially own their own home or gain independence from support programs entirely if that is their goal.

As of July 2017, more than 17 million individuals have been deemed eligible for participation in the TTW Program. Estimations predict that about 89,000 new beneficiaries become eligible for the Ticket program each month (Social Security Administration, 2012).

Unfortunately, the TTW program has not yet made a significant impact upon employment, earnings or benefit eligibility for individuals with disabilities. As of 2006, the national TTW participation rate was 1.6% and at the end of 2007, TTW increased the share of beneficiaries who receive employment services to only 2.29%. In 2010, out of 12.1 million ticket holders, only about 27,000 were actually engaged in the program (General Accounting Office, 2011).

“One potential reason for this lackluster performance appears to be a lack of providers interested in participating in this program” (Prenovitz, 2012, p. 4). When surveyed, providers reported barriers including; expected payments being too low to generate enough revenue to cover their TTW work, significant delays waiting for beneficiaries to qualify for payment and large administrative costs. Additionally providers reported burdens of “obtaining earnings documentation from beneficiaries who had already found work and were not motivated to provide this information” (Stapleton et al., 2008, p. 74).

Livermore and Roche compared the 2004–2006 National Beneficiary Survey data to Social Security administrative data and followed a group of beneficiaries participating in the program for several years in order to evaluate changes in their service use, health status, employment, and income. They discovered that about 20% of TTW participants achieved employment at levels that would significantly reduce their disability benefits. Another 40% achieved some employment success; however, the remaining 40% reported no earnings during the study period (Livermore & Roche, 2011, p. 105).

However, as the trend towards more integrated employment settings continues, opportunities for sheltered or subminimum wage facilities are eliminated and school

transition programs focus on opportunities for employment rather than preparation for adult support programs, the number of people with disabilities moving into full time employment can be expected to increase dramatically. As this shift occurs, programs like Ticket to Work and other benefit assistance programs will become even more necessary. Hopefully, additional programs will be developed to aid in facilitating this process and to ensure that the potential loss of much needed health and safety benefits does not jeopardize an individual's ability to seek employment opportunities.

Transition Services Provided through Schools

As part of a successful transition to adulthood, most experts believe that youth should be exposed to a range of work-based exploration experiences as part of their secondary education. The Parent Advocacy Coalition for Educational Rights (PACER) believe that for students, worksite visits, community service opportunities, job shadowing and paid and unpaid internships are key elements in career exploration (2017). Furthermore, The National Parent Center on Transition and Employment wrote in their *Guide for parents of students with disabilities* that “to successfully transition to the world of work, youth should use the school years to explore careers and engage in meaningful work experiences” (2016). Unfortunately, it is estimated that only one-third of young people with disabilities who need this type of job training receive it.

For many students who have disabilities, transition planning can be one of the primary keys to successful employment and community-based living. Regrettably, in a recent study parents indicated: “... that (transition plans) were generally woefully inadequate with respect to work and employment issues.” (Henninger & Taylor, 2015, p. 11).

For students with disabilities, it is highly encouraged that as the person reaches transition age, their Individual Education Plan (IEP) contain clear guidance on career exploration and even vocational assessments. In many states, this career exploration is required and even codified in law. Changes under the Workforce Innovation and Opportunity Act (WIOA) now require that transition planning be provided to all students with disabilities and that employment opportunities be discussed as part of that transition process with the individual.

However, a systemic problem often found across school districts is a lack of training for members of IEP teams about what transition services the law requires. There is sometimes a mistaken belief among school staff that merely referring a student with disabilities to a vocational resource satisfies the district's obligation. Transition goals and objectives require "appropriate instruction, assistive technology, behavior support, data collection and reporting, just like any other type of IEP goal" (Jaehning & Fleurant, 2015, p. 15).

Obstacles to quality transition planning and services are evident in both rural and urban school districts. In both settings, school personnel have a difficult time complying with the requirements as mandated in both IDEA and WIOA; however, the differences between urban and rural districts are noteworthy. Many larger urban school districts struggle with the volume of students eligible for services with many reaching the required deadline to receive those services without having taken any career aptitude or interest assessments. This delay in assessment influences course planning for transition goals, arranging for summer work experiences, part-time internships and shadowing opportunities.

Rural school districts usually lack funding and personnel and subsequently have little or no transition planning or services available to students, even with these services being mandated in federal law. The decentralized structure of most school districts creates a very disparate level of service across a state and the state's department of education is often challenged in their ability to direct how limited dollars are spent at the individual school district level. Between district programs, local mandates and often highly political community decision making, dollars for special education programs are often earmarked for a wide variety of projects before they are even received.

In Oregon, a state that the last census determined was 86% rural, a recent survey conducted by the department of education found that rural schools often do not take responsibility for guiding a student's search for transition options, for developing transition goals and objectives, nor for providing instruction or supports for postsecondary outcomes. In a partial response to this problem, the state department of education created regional transition network facilitators to serve as an ombudsman between the school districts and state and federal programs to help resolve some of these concerns. Additionally, the state department of human services also created regional employment specialists to work with the transition facilitators and county offices to help individuals with intellectual and developmental disabilities gain employment, and the states vocational rehabilitation division increased their school to work efforts under provisions outlined in WIOA. While most certainly important actions, each of these programs exist outside of the local school districts, and as such have been greeted with various degrees of support from the school districts that they support.

Transportation

Lack of transportation is often cited as the single biggest barrier to employment. This is especially true in rural areas that have no access to public transportation or in some smaller urban areas that lack adequate access to accessible public conveyance. Even in some locations with robust transportation networks, public transportation operates on limited schedules with accessible transportation being even more restricted. This inability to get to work can severely hamper a person with a disability from employment opportunities, especially if the person is unable to drive, has mobility limitations or requires a powered wheelchair.

Studies have shown that typically, the most versatile mode of transportation available to individuals with disabilities are taxicabs. A taxi can pick you up at your door and take you anywhere 24 hours a day, 7 days a week, 365-days a year. However, generally there are an inadequate number of accessible taxicabs to satisfy existing demand. This creates a significant barrier for individuals with disabilities, particularly for those who live far from the fixed bus or other mass-transit routes.

When asked what is the most significant way to increase employment rates for people with disabilities, advocates frequently state that policies addressing the employment of people with disabilities should include a focus on increasing accessible transportation and eliminating logistical barriers. In implementing the transportation provisions of the Americans with Disabilities Act, the U.S. Secretary of Transportation included a regulation that states, “[n]o entity shall discriminate against an individual with a disability in connection with the provision of transportation service.” (49 CFR 37.5(a), 2015).

Within this same rule, federal regulations establish what is known as an equivalent service standard for taxicabs. This rule outlines, “In any community where there are either no accessible taxicabs or an inadequate number to meet demand, there is no equivalent service (49 CFR 37.121, 2015). Thus, in instances where there are an inadequate number of commercial taxicabs to meet the demand of individuals with disabilities, these communities are potentially in violation of federal standards. However, there is not currently a clear means of enforcing this requirement and worse, how this equivalency is measured or established has never been defined.

One potential avenue to increase transportation services for individuals with disabilities is to expand paratransit routes. Federal regulations require that “each public entity operating a fixed route system shall provide paratransit or other special service to individuals with disabilities that is comparable to the level of service provided to individuals without disabilities who use the fixed route system.” (49 CFR 37.105, 2015). Again though, in the same vein as the taxicab equivalency rule, little oversight other than from local advocacy groups is usually provided with unclear enforcement guidelines and the only remedy often being costly and lengthy court cases.

Even in cities where para-transit is offered and where commercial taxis comply with the requirements of the ADA, this compliance often comes in the form of mini-vans or mini-busses that meet the intent of the law, if not exactly the spirit. In addition to providing support that is often extremely limited and segregated in nature, for those individuals using powerchairs or some other forms of accessible conveyance, the vehicles available often do not support the needs of this population.

Finally, the growth of ride-sharing services such as Uber or Lyft can potentially fill gaps in transportation services for individuals with disabilities. While the flexibility and easy access to transportation from these entities is well known, one potential complication with these type of programs is the independent contractor status of most drivers. This independent status can make it challenging for state or federal support entities to pay for these services, as existing rules require the ability to establish a contract and to monitor the vendors performance of the execution of that contract over time. As independent drivers work when they want to and cover areas that they want to, there is no way to guarantee that a specific driver and/or type of vehicle would be available when requested. Some states and local districts are working on solutions to this obstacle but, there is no single solution yet available. Advocates should work with ride-sharing services to ensure that individuals with disabilities have access to this new transportation option and to continue to push this discussion forward.

Behavioral Health Issues and Employment

While the principle focus of this study has been on people with intellectual and developmental disabilities, individuals with other types of disabilities also participate in sheltered workshop programs. Many if not most of the challenges faced by a person transitioning out of these segregated settings is the same or similar for everyone.

A deep research base supports the development of effective employment strategies for people with significant psychiatric disabilities. Numerous studies have demonstrated significant correlations between long-term unemployment and negative personal outcomes, such as increased hospitalizations, increased substance abuse, higher incidence of depression, lower self-esteem, and increased anxiety (Bruffaerts, Sabbe, & Demyttenaere,

2004; Comino, Harris, Chey, & Harris, 2003; Jin, Shah, & Svoboda, 1995). These same studies then tout the benefits of employment, including an increased sense of self-worth, social belonging and decreased substance abuse and depression.

Psychiatric symptoms and the lack of productive social connections are factors that influence employment, but the most significant impediments are generally rooted in policy, community structures, stigma, and other social and economic realities (Baron, Draine, & Salzer, 2013; Tschopp, Perkins, Hart-Katuin, Born, & Holt, 2007).

The last decade has seen greater attention paid to recovery, evidence-based practices, mental health transformation, and Medicaid disincentives issues. As Rapp et al. (2005) noted; “The bedrock of policy makers’ efforts is the establishment and codification of client outcomes. They are the ends for which the service system exists and for which consumers, providers and others work” (Rapp, C. A., Bond, G. R., Becker, D. R., Carpinello, S. E., Nikkel, R. E., & Gintoli, 2005, p. 351). “Achieving consistently positive outcomes is at the heart of Evidence Based Practice” (Goldman & Azrin, 2003, p. 811).

Yet, like trends for those diagnosed with an intellectual or developmental disability, overall employment outcomes for people with serious mental illness have not increased significantly. Across America less than 17% of adult public mental health consumers work at any level. More disturbingly, the number of people in this category who access evidence based supported employment is less than two percent (Butterworth et al., 2014).

While employment continues to as a cornerstone of recovery within behavioral health, state vocational rehabilitation programs (VR) remain a crucial resource for interagency partnerships, funding, training, and policy development. However, this need for collaboration between existing behavioral health programs and vocational rehabilitation

should in no way detract from the expectation that behavioral health systems should accept primary responsibility for assisting individuals they serve to pursue employment. The Institute for Community Inclusion (ICI) at the University of Massachusetts Boston has done case study work that “highlights how innovative collaborative practices between VR and mental health programs can serve as exemplars in the use of multiple resources, skills, and service models to produce better employment results” (Drake, Becker, Goldman, & Martinez, 2006, p. 304).

As sheltered workshops close, many of those former participants that had been receiving behavioral health supports in this setting must find ways to adapt these programs and services into their communities at large. This study will examine the outcomes of those participants receiving prior behavioral supports to see how it may impact a person’s ability to move into community integrated employment.

Criminal Histories

The link between intellectual and mental disabilities in relationship to incarceration has been well documented. Unfortunately, the number of individuals with intellectual disabilities becoming involved with the criminal justice system appears to be growing. While those with an intellectual disability comprise just 2% to 3% of the general population, they represent between 4-5% and 10% of the US prison and jail populations (Bowker, 1994; Davis, 2006; Petersilia, 2000a, 2000b).

While there is no available data on the exact number of sheltered workshop participants with a criminal record, this study showed that a considerable number of sheltered workshop participants had been arrested and charged with a wide range of offenses ranging from misdemeanor violations to serious sexual and assault charges. In many

instances these offenses could be directly tied to the individuals disability and a lack of services or assistance to help them understand how their actions could be harmful.

While it was not easily discernable in the research data for this study, ancillary records showed that many of the sheltered workshop participants with prior criminal records required “line of site” supervision as a provision of their release. This additional supervision requirement presents another obstacle for people with disabilities as they leave a secluded environment and attempt to enter into community work.

Many employers will not consider hiring applicants if they have a history of criminal behavior, which when taking into account the aforementioned high rate of individuals with intellectual disabilities that are involved in the justice system, causes a significant barrier to integrated employment. For those individuals that have been released from jail and had been participating in sheltered work, closing the workshop and helping the person transition into their communities requires specialized skills, training and often a dedicated one-on-one job coach for an indefinite period of time (Davis, 2006).

Intensifying this challenge are individuals with criminal histories that seek to leave the workshop while looking for work in an already impoverished community where employment prospects may be limited and where either a criminal record or an intellectual or developmental disability creates an almost insurmountable barrier to employment (Petersilia, 2000).

Employer Engagement

As states work to ready people with intellectual and developmental disabilities for employment, one key factor in the success of these programs is the ability for employers to recognize the skills that a person with a disability can bring to their workplace. As states

move to encourage people with intellectual and developmental disabilities to seek employment after school rather than what has been the historical move to social or day support programs, a frequent topic of discussion becomes the need for state agencies to increase engagement with business and community leaders. Programs such as “I work, we succeed” and the Employer Assistance and Resource Network on Disability and Inclusion (EARN) are actively trying to work with business leaders to understand the significant and often unique skills set workers with disabilities can provide.

As this emphasis is made on the benefits of hiring people with disabilities, arguments have been raised by advocates that disability agencies must focus more effort on increasing awareness of how employing people with disabilities can meet the employer’s business needs.

Many have also advocated that state programs should hire specific dedicated staff with business expertise to be the point of contact for community employers interested in learning more about hiring people with disabilities. This need to help create a “business case” or “create an inclusive culture in industry” is still in its infancy stage in most states and many are struggling with not only how best to provide this service, but more importantly what state agency it should be housed in (Butterworth, 2010).

In response to these concerns, state agencies are beginning to develop and present information to businesses that focus on the value people with disabilities bring to the workplace and to their greater communities as a whole (Davis, 2006). Best practice suggests that this information include testimonials from other business owners, the types of skills people with disabilities bring to jobs and the potentially low costs of providing reasonable accommodations (Jaehning & Fleurant, 2015, p. 25).

While some businesses readily understand the opportunities associated with hiring people with disabilities, many have been skeptical or reluctant to meet with advocates. One of the most frequently cited arguments made by businesses in regards to hiring individuals with disabilities is a fear over the anticipated large costs associated with accommodations. (Iyer & Masling, 2015, p. 18).

However, an effective state managed employer engagement program may offset these unfounded fears by dispelling this misinformation. According to the U.S. Department of Labor, “The majority of workers with disabilities do not need accommodations to perform their jobs, and for those who do, the cost is usually nominal. According to the Job Accommodation Network, a service from the U.S. Department of Labor's Office of Disability Employment Policy, 57% of accommodations cost absolutely nothing to make, while the rest typically cost less than \$500. Moreover, tax incentives are available to help employers cover the costs of accommodations, as well as modifications required to make their businesses accessible to persons with disabilities (United States Department of Labor, Office of Disability Employment Policy, 2015).

Another observation has been that not all employers and employees are accustomed to hiring, supervising, and working alongside people with disabilities. For states that seek to overcome this obstacle, providing training and information to employers as well as their employees as a proactive way of addressing potential discriminatory practices is strongly encouraged. Training should focus on federal and state laws that protect individuals with disabilities in the workplace and during the application process. Specifically, information could be provided that would cover imposing discriminatory job criteria, inappropriate application questions, direct inquiries into the existence of a disability, reasonable

accommodations, and effective communication. The training and information could also focus on best practices for fully integrating a person with a disability into the workplace, including the use of natural supports, and focusing on eliminating common biases or misconceptions (Jaehning & Fleurant, 2015, p. 25).

States that have had the greatest success thus far in engaging business and industry as well as shifting the existing paradigm away from day support programs and towards employment for people with disabilities have adopted an employment first strategy. Moving forward, engaging employers with this initiative will be key to guaranteeing the success of integrated employment.

The Employment First Movement

Since the implementation of the Developmental Disabilities Assistance and Bill of Rights Act of 1984, “increasing employment in integrated settings for individuals with developmental disabilities has been a primary goal of federal policy” (McInnes, Ozturk, McDermott, & Mann, 2010, p. 506). The DDA encouraged the creation of state-level supported employment programs designed to help individuals with developmental disabilities gain and retain paid employment in integrated settings within their communities. As of 2006, every state has created some form of supported employment programs (Braddock, Hemp, Rizzolo, Tanis, & Wu, 2011).

Growing directly out of the DDA initiatives, the Employment First Movement is an overarching effort that has grown exponentially over the last several years. The Employment First concept stresses, “Employment in the general workforce is the first and preferred outcome in the provision of publicly funded services for working-age citizens with disabilities” (APSE, 2010). Under Employment First, policies, services and resources align

with a primary focus on community employment. Employment First strategies consist of a clear set of guiding principles and practices promulgated through state statute, regulation, and operational procedures that target employment in typical work settings as the priority for state funding and the purpose of supports furnished to persons with disabilities during the day.

These policies anchor a service delivery system, focusing funding, resource allocation, training, daily assistance, and even the provision of residential supports in the overall objective of employment (Moseley, 2009, p. 2). Employment First represents a commitment by states to the propositions that all individuals with disabilities (a) are capable of performing work in typical integrated employment settings, (b) should receive employment-related services and supports as a priority over other facility-based and non-work day services as a matter of state policy, and (c) should be paid at minimum or prevailing wage rates.

The last seven years have seen tremendous growth in this movement across many states. As of July 2014, 26 states identify as having legislation, a formal policy directive, or other official state mandate addressing employment as a priority outcome in the delivery of day and employment services for people with disabilities (Hall, Winsor, & Butterworth, 2014, p. 11).

In support of Employment First efforts at the federal level, the Office of Disability Employment Policy at the U.S. Department of Labor (2009) has issued policy statements and developed grant opportunities and communities of practice to support implementation of Employment First in several states. In addition, the Association of People Supporting Employment First (APSE) is a national organization that focuses exclusively on integrated

employment. APSE has just recently issued a series of policy papers emphasizing the importance of integrated employment, including a statement of principles on Employment First (APSE, 2014). Furthermore, in 2011, the National Association of Councils on Developmental Disabilities in conjunction with the Alliance for Full Participation released a report entitled “The Time is Now: Embracing Employment First.” These reports all serve to highlight that Employment First is an idea whose time has come.

The success of Employment First goals rests on a state’s ability to create flexible person-centered options for people with the most complex needs; implement support alternatives that lead individuals along a path toward integrated employment; and foster personal and social development, active community engagement, and social participation. “Systems change requires that substantive improvements happen in day and non-work services based on a commitment to ensuring people with intensive needs receive appropriate supports to make meaningful contributions through real work” (Butterworth et al., 2014, p. 35).

Current Barriers to Employment for Individuals with Disabilities

Despite the clear direction that policy shifts have demonstrated over the past few decades, the need to emphasize the value of community employment for individuals with disabilities, at the national level shows little signs of progress. As this paper has demonstrated, people with disabilities encounter challenges and barriers that their peers without disabilities rarely experience when seeking employment, job retention or promotion. Impediments to meaningful employment continue to include “concerns by potential employers and coworkers, and the influence of common misconceptions about what a person with a disability is capable of doing” (Hanes & Ridgely, 1998, p. 6).

Beyond these attitudinal obstructions, environmental and financial aspects of the workplace may still create barriers to self-sufficiency and inclusion. Many of the current barriers to integrated employment opportunities for individuals with disabilities are the same issues that have existed for the previous twenty plus years. While, “today there are new allies in this effort in the form of the Employment First law and the Workforce Innovation and Opportunity Act “(Jaehning & Fleurant, 2015, p. 3), much work remains.

Since the 2009 U.S. Supreme Court’s decision in *Olmstead*, the United States has made significant changes in the focus of its service delivery system to enable people with disabilities to live in community integrated settings as required under the mandate of the American with Disabilities Act. However, despite these successes in community living, employment opportunities for this population is in many cases, still limited to segregated work settings that often pay low or even subminimum wages. This inability for people with disabilities to earn substantive wages and the continued restrictions on their earning potential in order to prevent a loss of medical and insurance benefits continues to create a significant need for income assistance programs. A research study produced in 2000 found that “the extraordinary costs associated with maintaining persons with disabilities on Social Security disability rolls constitutes a highly nonproductive and inefficient use of human potential and has reached an unacceptable level in this country” (Kregel, Wehman, Revell, Hill, & Cimeria, 2000).

While the passage of the Americans with Disabilities Act in 1990 heralded in a new era in employment opportunities for individuals with intellectual and developmental disabilities, many businesses have been critical of what they feel are substantial economic inefficiencies imposed on business and industry by the language of this law. Without strong

support from research, critics argue; “commercial costs outweigh the economic benefits of ADA implementation and some employers have chosen to ignore reasonable modification requests or have challenged these mandates in court” (Blanck, 1999).

Some employers continue to attempt to circumvent the ADA by ignoring qualified job applicants with disabilities in order to forgo the perceived and often erroneous beliefs surrounding the cost of infrastructure modifications or the stigma of hiring individuals with disabilities that may require the assistance of an on-site job coach. Maag and Wittenburg reported that employment rate of people with disabilities has been declining since the 1990s, despite the passage of the Americans with Disabilities Act and the relatively robust economy in the 1990s (Maag & Wittenburg, 2003). This overt discrimination occurs even though the existing literature is rich with research studies developing methods to support individuals with disabilities in work settings (Kregel, Wehman, & Banks, 1989; L. & Marsha, 2006; Post & Storey, 2002; Rogan, Banks, & Howard, 2000; Wehman, 2002; Wehmeyer, Agran, & Hughes, 1998).

The long-term impact of this systemic issue results in people with disabilities continuing to live in poverty and isolation, and the consequent socio-economic challenges typical of such an existence. On a larger societal scale, the fiscal impact of limited economic participation through employment by such a substantial portion of the population is huge. Measured in terms of the costs of public assistance and public programs this becomes a combined total of over “\$425 billion annually in federal and state funds, 95% of which is for income maintenance (e.g., Supplemental Security Income and Social Security Disability Insurance) and health care” (Stapleton et al., 2008, p. 33).

Moreover, there is growing concern over the increasing number of working age individuals receiving SSDI or SSI. “There are currently 14.5 million individuals between 18-64 on SSDI or SSI (7.4% of the population) (Butterworth et al., 2014, p. 3). This has resulted in calls for reform of this system, and increasingly greater scrutiny by the public.

In order to achieve a goal of full integration of individuals with disabilities into the nation’s workforce, it is essential to recognize the resources that facilitate inclusion as well as the barriers. Commonly recognized resources include access to transportation, benefits planners, on the job training, job shadowing and internships (Jaehning & Fleurant, 2015, p. 25).

Sheltered Work Facilities

One result of employer’s reluctance to hire people with disabilities has been the over-reliance on sheltered workshops as places for people with disabilities to work (Butterworth, 2014). Sheltered workshops, when first conceived, were promoted as places for people with disabilities to learn work skills and to prepare them for employment in the private sector. Over time, many of these facilities have morphed into businesses themselves often producing products or fulfilling contracts in support of piece mill work for larger companies and even in some instances, for state and federal entities. People with disabilities may now commonly spend their entire working career in a sheltered facility and receive little to no training applicable to moving out of the setting.

Many workers in a sheltered workshop are paid based on what is known as a productivity outcome scale. This method is calculated by having a person considered a ‘typical’ employee perform the task that the person with a disability will be required to do. If the ‘typical’ employee produces 10 widgets during a predetermined period of time, then

this becomes the productivity standard. The person with the disability is then asked to perform the same task and a time/production study is done. If the person with a disability is able to produce 3 widgets for example, then they will be paid 30% of the prevailing wage. This will non-uncommonly equate to considerably less than the prevailing minimum wage allowed by law. While this 'sub-minimum wage' is permissible under US Code, the federal legal context for sheltered workshops is decidedly contradictory (Brennan-Krohn, 2015, p. 25).

Although sheltered or facility-based employment has been an option for adults with intellectual and developmental disabilities for decades, more than ten-years ago the Rehabilitation Services Administration (RSA) eliminated sheltered employment as a preferred outcome for individuals with disabilities that are receiving vocational services because of concerns due to factors like the subminimum wage payments (Wehman, Revell, & Brooke, 2003, pp. 2-3). While there are fewer individuals working in sheltered settings today, there has not been a corresponding increase in the percentage working competitively (Butterworth et al., 2012).

A number of national policies support the perpetuation of sheltered employment including large federal programs such as Ability-One that offers incentives to businesses that employ a large number of people with disabilities and the sections of the Fair Labor Standards Act (FLSA) that allow employers of people with disabilities to continue to pay sub-minimum wages if the employees are less productive than an average, non-disabled employee (U.S.C. 8504(a), 2011).

With the passage of federal statutes such as the Workforce Innovation and Opportunity Act (29 U.S.C. Sec. 3101, et. seq., 2015) and the US Supreme Court decision in

Olmstead v L.C. (527 U.S. 581, 1999), there is now significant movement towards the eventual elimination of federal support for the authorization of subminimum wage classifications.

The passage of the Americans with Disabilities Act and the subsequent U.S. Supreme court decision in *Olmstead v. L.C.* “made clear that the segregation and isolation of people with disabilities meets the standards for discrimination” (Callahan, 2014, p. 3). Due to these and other controversies stemming from the segregated nature of the sheltered workshop environment, several states have begun to implement measures to reduce the number of individuals that participate in sheltered workshop programs. Other states have eliminated these services outright; examples of this include both Rhode Island and Oregon, which have successfully used the *Olmstead* decision to end the practice of state government sponsored sheltered workshops.

The Workforce Innovation and Opportunity Act of 2014 (WIOA) resulted in a significant overhaul of current support programs and provides a new emphasis on supporting people with disabilities in integrated community settings. However, while WIOA presents the potential for substantial advancement in employment for individuals with disabilities, critics argue that it does not go far enough in eliminating segregated work settings and even contains language that permits the continuation of these sheltered work facilities in certain situations.

An example of this apparent contradiction is found in Section 511 of the WIOA. This section provides allowances for individuals with disabilities under the age of 24 who are currently working in subminimum wage positions to continue this practice. (Workforce Innovation and Opportunity Act 2014, § 794g, sec. 511). For individuals under 24 years of

age who are not currently working at a subminimum wage job, but are interested in pursuing sheltered employment, the law requires only that the person provide documentation that they have received pre-employment transition services and have applied for vocational rehabilitation services. If they have, then these young adults may pursue “placement in a sheltered facility of their choosing” (Jaehning & Fleurant, 2015). For individuals over the age of 24 that are currently working in subminimum wage positions, they also may be ‘grandfathered’ and continue employment in a workshop setting following a vocational assessment through the states vocational rehabilitation office.

Lane versus Brown Court Challenge to Sheltered Facilities

In Oregon, advocates for individuals with intellectual and developmental disabilities filed a class action lawsuit in U.S. District Court on January 25, 2012 challenging Oregon’s failure to provide supported employment services to more than 2,300 state residents who were participating in sheltered workshops. This case, originally filled as Lane vs. Kitzhaber, eventually became the United States’ first class-action lawsuit to challenge facilities that pay subminimum wages to people with intellectual and developmental disabilities in segregated environments (Disability Rights Oregon, 2015). Lane v. Brown charged state officials with violating the Americans with Disabilities Act and the Rehabilitation Act by confining individuals with disabilities to segregated settings where they have little interaction with non-disabled peers. This challenge was eventually settled September 8, 2015 when the State of Oregon agreed to ‘close the front door’ to existing sheltered workshops and to transition current participants out of these facilities and into community employment settings (DRO, 2015).

Ultimately, Oregon identified 4,341 individuals that had been previously served in a sheltered workshop setting across the state and would be required to place no fewer than 1,115 of those individuals in community competitive integrated employment prior to June 30, 2022 (DRO, 2015).

The substantial legal requirements established to track and monitor the progress of these class members has created several detailed datasets containing a unique collection of information on what services each participant had received as well as demographic, diagnosis and eligibility information on each individual. Between September 2015 when the settlement occurred and the time data was collected for this study in July of 2017, 1,704 of these individuals has been enrolled in state vocational rehabilitation services.

Out of the 1,704 individuals enrolling for vocational rehabilitation services, 852 individual cases had been resolved as of October 2017 with 437 of those closures resulting in successful community work placements (51%). The remaining 415 individual cases were closed as unsuccessful or unable to gain community integrated employment (49%). The remaining 2,637 individuals have either not yet applied for vocational rehabilitation services or are currently open cases in the VR system.

Definitions Required for this Study

Providing vocational supports to individuals with disabilities in order to encourage successful integrated employment “has been a priority in federal policy for over 30 years” (McInnes et al., 2010, p. 506). However, as of yet there is no standardized methodology for explaining exactly how to define a successful transition from a sheltered workshop to an inclusive environment in rule. While references to “successful transition” as a concept exists

throughout academic, judicial and policy guidance, there does not appear to be a single commonly accepted determination.

For the purposes of this study, the Vocational Rehabilitation Services Rules were used to define a successful employment outcome. These rules state that a successful employment outcome is one that has “outcomes in which an individual with a disability works in an integrated setting” (State Vocational Rehabilitation Services Program, Final Rule, 2001, p. 7250).

An integrated employment setting will be defined as one “typically found in the community in which individuals interact with non-disabled individuals; other than non-disabled individuals who are providing services to those applicants or eligible individuals; and to the same extent that non-disabled individuals in comparable positions interact with other persons” (Final Regulations for State VR Services Program, 66 Fed. Reg. 7249, 2001).

Competitive employment will be defined as one in which the individual “earns at least minimum wage, as defined by the Fair Labor Standards Act, but not less than the customary wage and level of benefits paid by the employer for the same or similar work performed by non-disabled workers” (34 CFR 361.5(b) (11), 2001).

To meet this studies criterion as successfully completing a transition from a sheltered workshop setting into a community-integrated environment; an individual must have previously been receiving services or working within a sheltered workshop setting. They must have then left the segregated environment and are now working in a competitive, community based setting with non-disabled peers. Furthermore, they also must be receiving the same wages and benefits as other employees within this setting and will have been working within this setting for a period of not less than ninety-days.

Significance of This Study

America's segregated employment settings are facing ever-increasing scrutiny from advocacy groups and public opinion. One such example, the National Disability Rights Network, began formally working with Congressional Representatives to "expand employment options, specifically employment in integrated settings at competitive wages, to phase out the antiquated and obsolete public policies that lead to sheltered employment and sub-minimum wages, and to stop the further exploitation of workers with disabilities" (NDRN, 2017).

In a 2011 speech by the Principal Deputy Assistant Attorney General Samuel R. Bagenstos, he argued, "When individuals with disabilities spend years and in some cases decades, in (sheltered workshop programs) doing so-called jobs, yet do not learn any real vocational skills, we should not lightly conclude that it is the disability that is the problem. Rather, the programs' failure to teach any significant, job-market-relevant skills leaves their clients stuck" (Nonprofit Quarterly, 2012).

This shift in thought means that the roughly 230,000 individuals with disabilities being served there are facing almost certain relocation. While ideally these changes will occur in a manner that takes into account peoples strengths, desires and goals, the growing number of lawsuits, rule and policy changes will undeniably create a certain degree of turmoil, uncertainty and sometimes forced program closures.

With federal changes to the Medicare and Medicaid rules soon to require services to be provided in the "most inclusive environment possible" and the Workforce Innovation and Opportunity Act requiring increased scrutiny of subminimum wage employment the probable end of the state and federally supported sheltered workshop is here and will most

likely occur within the next five years. Moreover, the expansion of the Olmstead US Supreme Court Case findings to settings outside of just residential settings has put America squarely at a crossroads in terms of how it will support people with disabilities in the workforce.

While the existing literature clearly lays out a clear case for inclusion, community integration and the need for the acceptance and understanding of the concept of normalcy in our workplaces, what has been lacking is a systematic means of incorporating a person's prior training, education and experiences in the decision making process for how best to accomplish these goals. This study will build upon policy changes brought about by the Americans with Disabilities Act and the Workforce Investment and Opportunity Act and will embrace the concept of Employment First by helping individuals with disabilities achieve their goals through community inclusion and equal employment opportunities.

As of today, no study has sought to understand what services, programs and training are most likely to lead to successful, long-term, sustained employment in community settings for individuals that had previously only experienced employment in a segregated setting. By understanding what past experiences, education and programs are most likely to enable a person to successfully make this transition, vocational counselors, employment service providers and other advocates and professionals will be better positioned to help the hundreds of thousands of individuals living this reality face their future with the best probability of success possible.

Chapter 3: Methodology

The purpose of this study was to examine the programs, services and past work experience of a specific population of former sheltered workshop participants that were recently moved out of the segregated environments and into community-integrated positions. By identifying significant correlations between past services and experiences of individuals able to make this transition successfully and contrasting that with the same criteria for those individuals unable to maintain employment in a community setting after leaving the workshop, the findings from this study may contribute to the identification of future best practices for assisting individuals who are making this transition.

As a hypothesis, the author believes that individuals having participated in programs with exposure to previous community work services are more likely to be successful in obtaining and maintaining community integrated employment following their departure from a sheltered work facility. This hypothesis is based on the assertion that individuals with previous exposure to community employment will be more likely to relate to the concept of work in terms of expectations and responsibilities over their counterparts whose understanding of employment has been garnered solely from their experiences in the segregated or simulated work environment.

Data Acquisition

The 2015 decision by the state of Oregon to eliminate funding and close the state's sheltered workshops has created a unique opportunity to analyze what happens to people when their ability to participate in a sheltered facility is removed. As part of the settlement process brought about by the Lane v. Brown lawsuit, the state implemented specific guidelines and timeframes addressing what will happen to the individuals impacted by the

decision to close these facilities. Of particular interest to this study was the requirement that a minimum of 1,115 individuals effected by this decision achieve employment within their local communities and that the state provide clear documentation demonstrating how the services and training provided by state agencies served to facilitate this successful outcome.

Approximately 4,500 individuals were recognized as having participated in a sheltered workshop during the period covered under this decision and were subsequently named as a class member under the guidelines of this lawsuit. This identification of specific individuals and the in-depth requirement to monitor and report on their progress and outcomes has presented an exceptional opportunity to evaluate what happens when a sheltered workshop closes. Moreover, the unique abundance of data available on this group has also created a distinct chance to evaluate how services prepare people for employment in a community setting following their departure from a sheltered workshop.

While the states agreement to close the workshops lists several ways in which a person may achieve employment and be counted amongst the required 1,115 success stories, the language of the settlement agreement presented a clear expectation that the preferred strategy would be through services provided by the state office of developmental disability services and the division of vocational rehabilitation. In fact, as of the date of this writing in October of 2018, three years after the workshops began to close, the only individuals that have achieved employment and were counted as part of the required 1,115, have all been successful participants of the vocational rehabilitation program.

This study specifically examined the outcomes achieved by the 852 individual class members that have received services through Oregon's Division of Vocational Rehabilitation as of October 2018. In addition to the vocational rehabilitation agency

records, additional data was acquired on these individuals from the Oregon Office of Developmental Disabilities Services (ODDS), Oregon Health Agency (OHA) and the Oregon Department of Education (ODE). Information obtained through this data included medical/disability diagnosis and evaluation information, historical billing data to identify programs and services obtained by each person, demographic data as well as education, training and other skills related evaluations and information.

While Institutional Review Board approval was sought and obtained from the University of Idaho, it should be noted that no direct contact was made with any of the subjects whose data was included in this study and at no point was any personally identifiable information made available for its use. Individuals were only identifiable by a state created control number and that identifier was only used as a means to join data across the five individual data sets used by this study (See Appendix B).

Population Sample

The purposive sample of participants for this study was 852 former sheltered workshop participants who had received services from Oregon Vocational Rehabilitation (VR), and then some of whom had transitioned to successfully employment, while others had not. Because the data for this study had been previously collected by the state of Oregon, the type of analysis conducted for this study is considered as a secondary analysis study. Secondary analysis is the re-analysis of either qualitative or quantitative data already collected in a previous study, by a different researcher, normally wishing to address a new research question (Payne & Payne, 2004). By using the information provided by vocational rehabilitation as to whether one of these individuals made a successful transition to

employment or if the person was ultimately unsuccessful in achieving employment after using these programs, a very clear and well-defined population sample was obtained.

Of the individuals analyzed as part of this research ($N = 852$), 437 (51%) met the requirements established by the federal Rehabilitation Services Association (RSA) as having successfully achieved employment, while the remaining 415 (49%) were not considered successfully employed. To meet the threshold established by RSA as being successfully employed; the individual must be paid at least minimum wage, be offered the same benefits as others working at that employer in similar positions and have worked at the job for at least 90 days prior to being deemed successful.

The sample was comprised of 529 males (62%) and 323 females (38%). The youngest was 20 years old and the eldest 75 years old, with a median age of approximately 36 years of age. The majority were of Caucasian descent ($n = 752$ or 89%) with the remainder being African American ($n = 28$), Asian ($n = 15$), Native American ($n = 13$), Hispanic ($n = 3$) or non-specified ($n = 41$).

For each individual, the severity of his or her disability was determined using the Supports Intensity Scale (SIS) developed by The American Association on Intellectual and Developmental Disabilities (AAIDD). The SIS is an assessment tool that evaluates practical support requirements of a person with an intellectual or developmental disability. The SIS process consists of a 12-page interview and profile that tests support needs in 87 areas (AAIDD, 2017). At the conclusion of the SIS evaluation process, an assessment is determined using a tier score between one and six, with six demonstrating the most severe support needs. For individuals that require additional or unusual levels of support beyond the six established levels, an exceptions process can be requested by the individuals support

team and if exceptional needs are demonstrated, an additional classification of 'seven' is available in these cases.

In the study sample, 429 individuals were classified in the tier-one category (50%), 115 individuals were classified as tier-two (13%), 58 individuals were tier-three (7%), 43 were tier-four (5%), 36 were tier-five (4%), 23 were tier-six (3%) and 19 were considered eligible for an exceptions case and were assigned a tier level of seven (2%). There were an additional 129 individuals (15%) where a SIS tier score was unavailable.

The primary hypothesis of this study was that individuals with intellectual and developmental disabilities that had participated in real, community-based work experiences prior to seeking employment were more likely to be successful at obtaining paid work in their communities. As such, analysis was performed with the understanding that successful employment outcomes following vocational rehabilitation services would be considered the dependent variable in most instances.

Inferential Statistics

Much of the analysis performed during this study was grounded in inferential statistics methodology. Using inferential statistics techniques, conclusions that extend beyond the sample data may be identified (Trochim, 2006). Inferential statistics can be used to make interpretations (inferences) based on relations found between correlations identified within the sample, and then extrapolate these findings to predict relations in the population. Inferential statistics can also help decide whether the differences observed between groups in the sample data are strong enough to provide support for postulated differences that may exist within the entire population (Scholten & Van Loon, 2016).

The 852 individuals examined for this study as the population sample represented approximately 20% of the overall 4,500-member population identified by the state of Oregon as having been in a sheltered workshop prior to the elimination of services. A hallmark of inferential statistics is that given the use of a random sampling method, combined with an adequate sample size, it is valid and defensible to infer the findings identified from an analysis of the sample to the population as a whole.

Identifying an adequate sample size for inferential statistical analysis is typically done using confidence intervals and margins of error. The generally acceptable confidence interval and margin of error when conducting academic research in the social sciences is that data must meet a confidence interval of 95% with a margin of error not-greater than 5% (Medina, 2015). With an overall population size of 4,500 and requiring a 5% margin of error with a 95% confidence interval, a minimum of 355 individuals would need to be included in any sample that would be used to represent this population.

Data Sets

This study involved the analysis and evaluation of over 200 individual data-points for each of the 852 individuals included in the study (see Appendix B). These data points included 76 individual demographic indicators such as age, gender, race, education level, family and living condition information as well as disability level and severity that had been collected as part of the Oregon Department of Human Services (DHS) Office of Developmental Disabilities (ODDS) original service intake for each person.

Another 28 individual indicators collected as part of the DHS eligibility evaluation were included in this study, as well as an additional information pertaining to an individuals' historical participation in 29 separate paid support programs offered through the ODDS. A

further 28 additional data points were included based upon information collected and assessed as part of the vocational rehabilitation process and lastly, respondent's answers to the states 39 question individual experience survey from 2016 were included when available.

For those participants in the sample that had an existing work history with a community-rehabilitation service-provider, additional information on wages, hours worked, on the job support needs and other related information was available through the ODDS Employment Outcomes System Survey for each quarter from 2011 to the present.

While not all 200 data points were available for each person, as not everyone had necessarily been active in all programs or participated in all the available services, in most instances a majority of each main categorical area was available. In instances where the information was absent, any analysis outcome factored out the missing data where necessary. Most importantly, for the 437 individuals that had completed the VR process successfully, an almost complete data set was available for each of those individuals.

To prepare the data for analysis, each of the individual data sets were first matched to a specific person using a unique identifying number. Once this number was matched, all other potentially identifying information was removed; this included names, dates of birth, social security numbers and specific place of residence. A key for each data set was created and then all of the more than 200 individual data points were converted to numeric variables to allow for analysis.

Agent Based Modeling

Agent Based Modeling is accomplished through the use of computer models that attempt to capture the effects of individual interactions occurring within an environment.

These models (or algorithms) are more intuitive than typical mathematical or statistical methodologies as they are able to represent interactions as we actually understand them: as distinct things occurring in the world around us (Evans, 2016). In agent-based modeling (ABM), a system is modeled as a collection of autonomous decision-making entities called agents (Bonabeau, 2002). At the simplest level, an agent-based model consists of a series of interactions and the relationships between them. Even a simple agent-based model can capture complex behavior patterns and provide valuable information about the dynamics of the real-world system that it emulates (Reynolds, 1987). Typically, the “numerous interactions between agents that are a feature of agent-based modeling, are outside the reach of pure mathematical methods and require the power of computers to explore these unique dynamics” (Proceedings of the National Academy of Sciences, 2012).

One of the primary conventions of agent based modeling is to use simulation technologies to support mathematical analysis of complex systems (Yamamoto, 2007). Modeling complex interactions in a fully analytical fashion is not easy, and agent based modeling is often the only way to adequately access situations where multiple interactions produce complex, macro-level phenomena (AAMAS, 2007). Trying to understand interactions within systems such as transportation networks, multi-level enterprises or even amongst competing levels within societal structures are typical example of where an agent based modeling analysis is particularly useful (Mizuta, pp 900 - 902, 2007).

Agent Base Modeling has three primary benefits over traditional statistical methods when examining complex interactions; first, it can capture emergent phenomena. An emergent behavior occurs when a number of simple entities (agents) operate in an environment, forming more complex behaviors as a collective. If emergence happens over

disparate size scales, then the reason is usually a causal relation across different scales. Secondly, agent based modeling is able to create a natural understanding of a complex system of interactions. By analyzing each interaction (or decision) not only as a separate entity, but also in comparison to the system as a whole, the effect of these relationships may be understood. Third, agent based modeling is both scalable and flexible and easily adapts to provide a framework approach to answering questions such as “why is this happening, if these trends continue, what will happen next and what is the best that can happen based on pre-existing conditions” (Gaudiano, 2016).

Additionally, Agent Based Modeling is an acceptable methodology for evaluating complex data structures in a wide variety of formats (Nelson & Kennedy, 2015). These include; non-linear, discontinuous, or discrete interactions, heterogeneous situations where the data may represent multiple variables or contain multiple interactions and in networks or data sets where social interactions may occur (The Journal of Geospatial Analysis, 2018). This last example is particularly poignant for social processes when agent interactions exhibit complex behavior, including learning and adaptation, such as when dealing with attempts to model human behavior and decision making (Bonabeau, 2012). With over 200 individual data-points measuring both demographic factors as well as specific programs and services occurring over a five-year period for 852 individuals, agent-based modeling presented a sound scientifically proven methodology to model interactions and relationships at this scale.

This study utilized several methodologies to determine what services and programs were mostly likely associated with an individual having achieved either a successful or unsuccessful employment outcome. Overall, agent based simulation (or agent based

modeling) was the preferred evaluation strategy employed due to its inherent ability to work with the large number of interacting variables and to identify particular paths and outcomes amongst many complex variables. For the purposes of this study, IBM Modeler version 18 was used primarily for agent based modeling with additional analysis occurring through the use of IBM Statistical Package for Social Sciences (SPSS) version 25, SAS version 9.4 and RapidMiner Suite version 9.0.

Chi-Square Automatic Interaction Detection

Chi-Square Automatic Interaction Detection (CHAID) Analysis was the primary form of agent based modeling used in this study. CHAID Analysis was chosen as the preferred method of evaluating data in this project due to its ability to identify patterns in datasets with a large number of categorical variables and is a convenient way of summarizing the data as the relationships can be easily visualized. CHAID Analysis is a technique developed by Gordon Kass in 1980 to discover the interaction and relationship amongst competing variables (Kass, 1980). CHAID analysis works by creating a predictive model to help determine how variables best merge to explain the outcome in the given dependent variable. In the case of this study, the primary research goal was to understand what programs and services were most likely to produce a successful employment outcome as defined by the federal Rehabilitation Services Agency Standards. By identifying instances in the vocational rehabilitation agency data where a person was eventually classified as having been successfully employed under those guidelines, the CHAID analysis was able to analysis all of the historical data provided to identify commonalities and correlations amongst those cases.

Unlike in regression analysis, the CHAID technique does not require the data to be normally distributed. Additionally, nominal, ordinal, and continuous data may be used simultaneously as long as the datasets are coded in accordance with the requirements of the software modeler being used.

In preparation for the CHAID analysis, data used in this study was first coded to work within the parameters necessary for this software to work correctly. For example, nominal data such as the names of programs that an individual participated in was identified with a numerical label as necessary (Job Coaching may be coded as 1, Employment Path Community Support Services as 2, Day Support Activities as 3, and so on). The dates in which a person received the service was also kept and entered as a continuous variable. This was due to the fact that when a person received a particular service and in what order they participated in the service may have impacted their later propensity to be successful in a separate program.

In variables where outcomes were important, a positive outcome could be coded as 1 while an unsuccessful outcome could be coded as 2 for instance. Likewise, where the datasets contained ordinal data such as evaluations of a person's disability severity level as established through standardized medical or psychological evaluations, the scale established for the test was used to label those variables accordingly. (As an example, the Supports Intensity Scale (SIS) produces a score of 1-6 with 1 identifying the person as needing fewer supports while 6 indicates the person may require substantial levels of assistance with an activity).

This coding was accomplished for each of the approximately 200 variables identified for all of the 852 people reviewed as part of this study. By coding each of these data points

and building them into the CHAID model, the algorithm is then capable of identifying patterns, correlations, sequences and paths that relate to similar outcomes.

This process works as CHAID will perform different statistical tests based upon the composition of the data set being evaluated at the specific point of interaction. For instance, if the variable being evaluated is continuous, the F test is used and if the variable is categorical, the chi-square test is used.

Each specific interaction is then assessed to determine what is least significantly different with respect to the specified dependent variable. As part of the CHAID modeling process, the user must identify what the alpha value should be in order to accept or reject a specific outcome for each decision. Gilbert Ritschard a leading expert on CHAID analysis suggests that researchers should set these thresholds to the “usual critical values considered for statistical significance, 1%, 5% and 10%” (Ritschard, 2001). In the original paper outlining the creation of the CHAID algorithm, developer G.V. Kass recommends using 0.05 as the alpha (or significance) value as the point for accepting or rejecting the decision. In keeping with generally accepted statistical methods, 0.05 was set as the alpha value for this research.

As the algorithm works through the various interactions determining their overall relevance to the specified dependent variable, each decision point is then either accepted or rejected and then that interaction is merged into the overall outcome. When the respective test for a specific interaction is identified as not being statistically significant as defined by the established alpha value, then it will merge the respective options and find the next sequence of interactions. If the statistical significance is significant (less than the respective alpha value), then it will compute a Bonferroni adjusted p-value for the set of categories for

the merged cross tabulation (Diaz-Perez, 2016). Once the algorithm has finished analyzing each possible interaction and decision point, a tree like visual diagram is produced showing the various possible interactions, paths and decisions that were made during the calculations.

One significant issue recognized with this type of analysis is the tremendous number of calculations that are performed for each decision point and the subsequent large amounts of data produced at each node in the process. This is especially true if the algorithm reaches a decision point that requires extensive regression testing or where both continuous and categorical variables must be compared simultaneously. In these instances, the output will also include the ANCOVA, effects and interaction data for each interaction. Authors Witten and Frank identify this trait in the 2000 edition of their textbook on Data Mining, "A general issue that arises when applying regression methods within (CHAID techniques) is that the final trees can become very large. In practice, when the input data is complex and, for example, contain many different categories for classification problems, and many possible predictors for performing the classification, then the resulting trees can become exceptionally large. This is not so much a computational problem as it is a problem of presenting the output in a manner that is easily accessible to the "consumers" of the research (Witten & Frank, 2000).

In regard to the research done as part of this study, many hundreds of sets of data runs were performed resulting in thousands of pages of output. In some instances, a single evaluation performed on one relationship between services within a specific area resulted in 50 or more pages of printed results. In the results section (see Chapter 4) of this work, specific interactions of importance are identified and the data supporting those relationships is provided in depth.

Testing for Statistical Significance of Variables

While Agent Based Modeling and CHAID techniques are specifically designed for working with high levels of variable interaction and where the often randomness of human interaction may complicate analysis, in order to understand which variables to include in the modeling process and which were redundant or potentially invalid, additional research analysis was also performed. In order to produce the best potential for a successful outcome, agent based modeling requires that the data input for analysis be as accurate, reliable and have the highest possible degree of fidelity as possible.

Due to the number of data sets used, the large number of variables present and the potential for cross-correlation between variables similar in nature, analysis was performed to tune the datasets prior to submitting them for CHAID analysis. Ultimately, only those variables found to be statistically valid were included in the modeling portion of the analysis. This was important as in some instances data had been replicated in different sets under different titles, and as data may have been collected at different times in the person's life, it was essential to ensure the validity and recency of each piece of information.

Where data was potentially duplicated but would need to be reviewed in context with other information, a date was established and assigned to those pieces of information. For example, if an individual's reading ability was evaluated in high school and again following graduation, and their ability to gain employment was shown to be higher following graduation, then it would be important to keep both pieces of information as there could be a potential correlation between reading score and employment.

All analysis was based upon the assumption that for each test, the dependent variable would be based upon the individual's employment outcome. For a variable to be considered

relevant to a participant's outcome (either positively or negatively), the tests p-values were evaluated based upon the results of the specific test used.

A p-value provides a statistical summary of the compatibility between the observed data, and what we would expect to see if we knew the entire statistical model were correct (Gupta, 2018). This value is then used to measure the strength of evidence against the null value (Dorey, 2010). In this evaluation, our null hypothesis was that the variable (participating in a service, program, demographic, etc....) did not affect a person's ability to work in a community-based job, while the alternative hypothesis was that there was a possible relationship between the individual receiving the service and their eventual ability to work in a community-based job.

A value of 0.05 was established as the standard for establishing the significance level of the test being performed; this value is referred to as the alpha level, or alpha value. When the appropriate test revealed that the p-value was less than or equal to 0.05, the null hypotheses was rejected. By rejecting the null hypothesis (the service or program did not affect an individual's ability to work in the community), we could determine that there was a likelihood that the variable being evaluated was potentially influencing the outcome of the person's employment situation.

The rationale for this is that a p-value of 0.05 suggests there is only a 5 percent chance the correlation results would have occurred if in fact there were no actual correlation within the population. An example of this occurring could be if a person's county of residence was evaluated against their ability to successfully-gain employment following completion of the vocational rehabilitation program. If the appropriate test was completed and the p-value was found to be 0.05, we could safely reject the argument that the county

that a person lived in did not affect their ability to find work and assume that there may be some correlation between a person's county of residence and their eventual employment outcome. In this case, county of residence would be added to the list of variables needing to be included in the agent based modeling algorithms to test for additional relationships.

Testing for Interaction and Independence

In addition to agent based modeling, further testing was performed to help identify potential interaction amongst variables in different data sets and to identify when these effects were important to contextualize. Interaction occurs when the effect, or outcome, of one variable is contingent on the value, or existence of another variable (Frost, 2008). Identifying this type of interaction in an analysis is important as it could indicate that an outcome or effect found in an analysis is not inclusive to itself but may require a secondary event to happen in order to achieve a specific outcome or if something occurs more frequently if a second thing is happening as well. As an example, we may identify a person working more regularly in good weather rather than in poor if they do not have access to community transportation services. This could indicate the person has no means to get to work other than walking and the transportation variable is impacting the work reliability variable. In some instances, an exceptionally high level of interaction could also indicate that a hidden correlation is occurring, and/or the variables may be measuring the same thing.

Generally, when two variables are interacting the impact of one on the other is easy to identify. If the first variable increases, an increase (or decrease) by a certain amount can be noted in the second variable. For example, if we noticed a decrease in bad weather and an increase in the number of days a person is reporting to work, we can determine that good weather has a positive impact on a person's work reliability while bad weather has a

negative impact on work reliability. However, when that interaction appears to exact or perfect, a situation known as ‘perfect multicollinearity’ may exist (Baugley, 2012).

Perfect multicollinearity is usually an indication that two variables may be measuring the same thing. As this was highly possible due to the use of multiple datasets being used for each person, multicollinearity was tested for during the evaluation process. Most modern software suites will test for this occurrence automatically and identify when there is a high probability of it taking place. Both primary software suites used in this analysis (SPSS and SAS) test for this possibility.

Depending on whether the dataset being evaluated contained variables that were categorical or continuous, appropriate tests were then used to identify and evaluate the degree of possible interaction. When high interaction or correlation was identified, and the variables were found to be similar in nature, the most relevant variable was kept while the others were excluded from additional testing. An example of this was between the variables “VR Office Name,” “VR Branch Office” and “VR County of Service.” In this example, the VR Office is the lowest common denominator and the most likely source of relevance to a person’s successful outcome.

Testing for Statistical Significance

A Pearson Chi-Square Test of Significance was the primary test used to identify a correlation between a person receiving a service and an eventual successful employment outcome when the data being evaluated was categorical in nature and there were at least five instances of the event having occurred. The Chi-Square test is used to determine whether sample data is consistent with a hypothesized distribution and examines the relationships between those two variables. With this test, the null hypothesis was that there was no

statistical relationship between a successful employment outcome and the service or program being compared. If the test resulted in a p -value less than 0.05 then it was determined that there was not a statistical significance between the outcome and the variable being evaluated. All Chi-Square testing was performed using SPSS software.

While the test conducted through the CHAID and agent based modeling programs automatically used Chi-Square testing when appropriate as part of its mapping process, additional testing was performed separately and independently by the researcher to contextualize and understand the connections and relationships identified by the software. Additionally, while Chi-Square testing will detect that a relationship exists between two variables, it does not autonomously identify the strength of that relationship or determine what the connection may mean.

A known limitation with Chi-Square testing when used on datasets as large as the one used in this project, is that it may at times erroneously identify potential relationships that do not in fact exist. Tests performed after the CHAID process was complete were principally accomplished to provide more conceptual information as to what those relationships meant, but also to validate that relationships identified in the autonomous testing performed through agent based modeling were accurate. It should be noted that no erroneous interactions were identified through the independent testing process.

As the Chi-Square test only identified that a correlation existed, the Cramer's V test was used to determine the strength of the relationship between the two variables. The Cramer's V is used to measure the strength of association between two nominal variables and produces an output value between 0 and 1. Values close to 0 indicate a weak association between the variables and values close to 1 indicate a strong association between the

variables. If a particularly weak or strong relationship was found to exist, it was noted in the results section (See Chapter 4). The Cramer's V test was also important to use as it considers the overall sample size being studied and will negate any potential erroneous information provided by the Chi-Square test when a large number of variables are being compared (Bera, 2017).

An Odd's Ratio or Relative Risk Analysis was also conducted on variables when appropriate. An Odd's Ratio test presents a measure of association between an exposure and an outcome. The value given will represent the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure (Nickson, 2015).

For the purposes of this study, Odds Ratios were used to calculate the potential for a program to impact a successful employment outcome across individuals in the population sample that had participated in that specific program, as well as those not receiving that service but achieving a similar result without it. For example, if 40 people received individual skills training in a facility based setting and later achieved a successful employment outcome, the odds ratio presented would be a comparison between those that achieved employment after receiving the service, as compared to those that achieved employment without receiving the service. Relative Risk Analysis on the other hand determines the likelihood of the individual being successful or unsuccessful only amongst those within the group having received that service or program. In instances where either of these ratios was found to be significant, it was identified in the results (See chapter 4).

The Goodman and Kruskal Gamma test is used to measure the strength and direction of a relationship between two variables on an ordinal scale (Weaver, 2004). This test was

performed on appropriate variables within the individual datasets to evaluate the relationship between the variable and successful or unsuccessful outcomes for the participant. On variables where a Goodman and Kruskal Gamma test was run, it was first verified that the variables were ordinal and that there was a monotonic relationship between them. Examples of some variables evaluated with this test include, Tier Level and Disability Levels when compared to successful and unsuccessful outcomes.

The Somers' *d* test is used to evaluate the strength and direction of association between an ordinal dependent variable and an ordinal independent variable. This test is similar to the Goodman and Kruskal test however, the Somers' *d* test requires a distinction between the independent and dependent variables (Newson, 1996). Examples of when a Somers' *d* test was performed would be when comparing age groupings and successful outcomes or when testing for the significance of the number of days between plan and closure or application and plan for the participants when working with VR.

This study was developed to investigate and better understand the connection between the services and programs a person participated in and that individual's ability to transition successfully from a sheltered workshop into community employment. As such, a tremendous amount of reliance on statistical analysis was required to tabulate the results, findings and recommendations produced by this work. No other examples of a study of this type were found while researching the literature making this project unique in its scope and understanding.

Additionally, this is the first known example of a study on sheltered workshops having access to the volume and types of data made available to this project. By making use of agent based modeling and CHAID algorithms as the primary means of data analysis and

then supplementing this work with traditional statistical analysis where needed, the ability to begin to understand the dynamic and complex relationships between services, programs and outcomes has been achieved.

Chapter 4: Results

This study was designed to evaluate what services, programs and past training and experiences were most likely to lead to a successful transition for a sheltered workshop participant as they made the transition into community employment in a traditional job setting. Additionally, research was conducted to evaluate if some programs or services had a potentially detrimental impact on a person's ability to transition from the workshop and into a community job.

To be considered a successful transition, an individual must have met the federal Rehabilitation Services Administration guidelines for a rehabilitative outcome. That is, the person must have left the sheltered workshop, received assistance with finding employment in an integrated setting, earning at least minimum wage, but also a wage commensurate with others in the same line of work. They must have the same benefits and opportunities as others in the workplace and they must have maintained this position for at least 90 days after reaching a point of stabilization in their job.

As part of this study, 852 individuals that had previously been part of a sheltered workshop in Oregon and had applied for employment services through Oregon Vocational Rehabilitation were evaluated to determine their outcomes. Approximately 200 individual data points were analyzed for each of these individuals and ultimately it was found that 437 (51%) obtained successful community employment.

This author hypothesized that previous services occurring either at an actual community work site or in a community environment, or training and career exploration occurring outside of a facility-based setting is more likely to result in a successful employment outcome over services taking place in simulated or 'like' community settings or

entirely in a facility based structure. The research data obtained during this study supports this hypothesis.

Beneficial Support Services

To be considered a beneficial service for the purposes of this study, the results must have shown that a majority of individuals having received the service previously had been successful in obtaining a job in a community setting and having been determined by Vocational Rehabilitation as being a successfully closed placement. Additionally, the service must have reached the statistically significant threshold during the services analysis.

The most important indicator of an individual's eventual successful transition to community employment was found to be the person's participation in one of two forms of available job coaching supports. In Oregon, there are three types of job coaching supports available through the Oregon Department of Disability Services (ODDS).

Initial Job Coaching is job coaching that takes place after a person has obtained a job in the community and it is determined that they require assistance with learning the tasks associated with that position, or that they may need help in performing some of the functions or responsibilities that are required with this position. This service is available once a person is determined by Vocational Rehabilitation as having reached a point of stabilization in their work position and is available for up to six months after this occurs. Eighty-nine percent of the 170 persons that had received initial job coaching were successfully able to obtain and maintain a job in their community ($N=170, p=0.00$).

Ongoing Job Coaching, or what is sometimes referred to as Individual Supported Employment (ISE), is a service that provides one-on-one individual support for a person working at their community employment location and takes place after initial job coaching

ends. This is available for people that are doing well with their job by may require some continued additional assistance with performing some of the tasks required with their job. Ongoing Job Coaching is available for up to twelve months after Initial Job Coaching has ended. Overall, 84% of participants receiving ongoing job coaching were found to be successful at obtaining and maintaining community employment ($N=283$, $p=0.00$).

The third job coaching service available in Oregon is Maintenance Job Coaching and is available for individuals after both initial and ongoing job coaching has been exhausted. As the ultimate goal of job coaching is to help the person become independent in their position and to fade or eliminate the need for continued supports if at all possible, Maintenance Job Coaching is considered an ‘exception’ and not a typically available program.

To be eligible for Maintenance Job Coaching a person must have a demonstrated need for assistance on the job site and must apply on a yearly basis for an approval to continue job coaching. This is a new program in Oregon and was first implemented in February of 2017. As such, there was not enough available data to determine the successful or unsuccessful outcomes associated with this program. However, as everyone receiving this service has been working in a community job for at least 18 months in order to be eligible to apply, it would be expected that 100% of its program participants would be shown as successful.

This study found that almost as important to a person’s success as job coaching services was that a participant also received a transportation support service. A transportation support service is any paid support that provides a person with the ability to use public mass-transportation either by themselves or with the aid of a support worker.

These services may include taxi, bus or other regular community operated mode of transportation. While most transportation-support services were found to be beneficial, ideally a person should have access to Commercial Transportation Community Services. Sixty-nine percent of the individuals using this service were successful in working within their communities ($N=45$, $p=0.015$).

Employment Path Community Services is an employment support similar to job coaching. In this service, individuals are working at a job and earning at least minimum wage, however, oftentimes the job is provided by the individual's provider agency and the hours, wages and schedule is dictated by the company directly providing the service.

Employment Path Community Services is considered a transitional step between the workshop setting and a true community job and closely mirrors what true community employment looks like. Participating in Employment Path Community Services led to successful employment for more than 55% of the 475 individuals that had participated in this program previously ($p=0.01$).

Day Support Activity Facility Skills Training is a non-employment service primarily used to teach individuals in facility-based services settings, personal and community adaptive skills that are important to daily living. These skills may include learning to understand the value of coins or paper money, improving their reading ability or other similar skills. For persons that had participated in DSA Facility Based Services, those individuals that had also utilized DSA Facility Skills Training tended to have a more positive outcome ($N=126$, $p=0.02$).

Day Support Activity Community Skills Training is a non-employment service primarily used to teach individuals how to navigate and engage with society in a community

setting. These skills may include learning to ride the bus, order from a restaurant menu or learning how to cross streets safely. For individuals that had previously participated in DSA Community Based Services, participation in DSA Community Skills Training generally resulted in a positive outcome (N=113, p=0.04). Over 60% of individuals that had received these services closed successfully with a community-integrated job through vocational rehabilitation.

Table 4.1. Beneficial ODDS Services

| Beneficial Services | N | Percent Successful w/ Service | Chi-Square Sig. | Levine's Sig. | Somers' D | Cramer's V |
|------------------------------|-----|-------------------------------|-----------------|---------------|-----------|------------|
| Initial ISE | 170 | 89% | 0.000 | 0.000 | 0.300 | 0.375 |
| Ongoing ISE | 283 | 84% | 0.000 | 0.000 | 0.431 | 0.458 |
| Comm Trans Commercial | 45 | 69% | 0.015 | 0.000 | 0.037 | 0.083 |
| DSA Facility Skills Training | 126 | 61% | 0.017 | 0.000 | 0.058 | 0.083 |
| DSA Community Skills Trng | 113 | 60% | 0.042 | 0.000 | 0.047 | 0.070 |
| Employment Path Community | 475 | 55% | 0.011 | 0.001 | 0.086 | 0.087 |

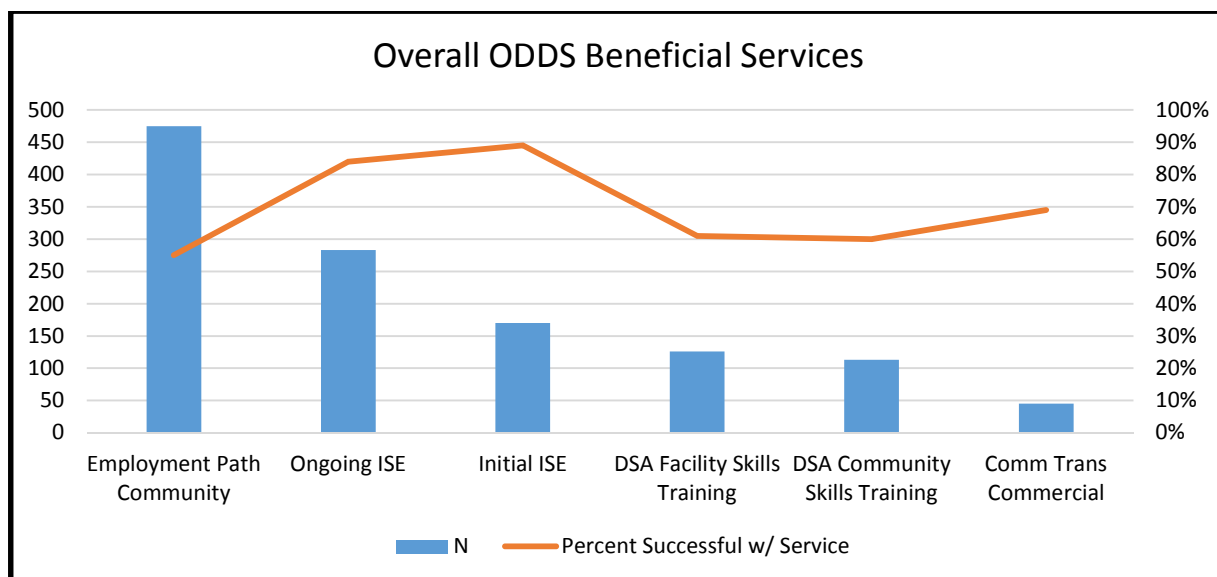
Additional evaluation using odds ratio and cohort analysis was conducted on the services identified as being beneficial to a person's success to aid in further determining their overall impact on an individual's outcome. This is useful in understanding how significant each service may be towards assisting an individual in obtaining or succeeding in a community employment setting.

Analysis found that individuals that had received Initial Job Coaching supports had an increased success rate of 11%. This means that participants with Initial Job Coaching were found to be eleven times more likely to be successful than participants without it. Additionally, individuals that had also received ongoing job coaching after their initial job-coaching period were found to have a 9.5% increased chance for a successful outcome.

As noted previously, it was identified that transportation supports are almost as important to a person's success as job coaching. Overall, 69% of the individuals that had previously received Community Transportation Commercial Services were successful. Additionally, people receiving this service were found to have a 2.2% increased chance of achieving a successful employment outcome.

For those individuals having received Facility Based Skills Training, 61% were later successful in achieving community employment and overall were found to have a 1.6% increased chance for a successful outcome over those that were also in a facility-based setting but had not participated in this training. While for those individuals having participated in Community Skills Training, 61% were successful in obtaining community employment and overall were found to have a 1.5% increased chance for a successful outcome.

It is important to note that of the 852 individuals reviewed for this study, 455 had participated in Employment Path Facility and more than half (55%) of those individuals were ultimately successful in obtaining community employment. Overall, having received Employment Path Community services was found to have a 1.4% increased chance of success.



Graph 4.1 Overall ODDS Beneficial Services

Detrimental Support Services

Day Support Activities Facility Attendant Care is a one-on-one service provided in a facility based setting where a support provider offers assistance with personal attendant needs. This is often related to skills such as toileting, personal hygiene or assistance with dressing or clothing. Individuals that had previously received DSA Facility Attendant Care were found to be unsuccessful on average 90% of the time when attempting to obtain community integrated employment (N=177, $p=0.33$).

Attendant Care Independent Activities for Daily Living Supports (IADL) is a service where a dedicated support person works one-on-one with an individual to help them develop skills in the area of personal living. This is most often found to be hygiene related or can also be related to some other residential type skillsets. Overall, only 45% of those individuals that had previously received Attendant Care IADL were able to succeed in a competitive integrated job (N=22, $p=0.58$).

Transportation Provider to and from work support is a service where the provider agency provides dedicated transportation for an individual to and from their job site. Oftentimes transportation offered under this service is specifically to a job that the provider agency operates or controls rather than a more typical community job. For the 20 individuals that had previously received Transportation Provider to/from Work Services, 65% were unsuccessful at reaching a successful outcome (N=20, $p=0.14$).

Individual Skills Training is a service where a support worker will work one-on-one with an individual to help them improve a life-skills ability. Examples of this may be in areas of hygiene, interpersonal skills or self-care. Results for those individuals that had previously received Individual Skills Training showed that three out of four individuals were unable to close successfully at VR (N=4, $p=0.29$).

Table 4.2. Detrimental ODDS Services

| Service | N | Percent Successful w/ Service | Chi-Square Sig. | Levine's Sig. | Somers' D | Cramer's V |
|-----------------------------|-----|-------------------------------|-----------------|---------------|-----------|------------|
| Attendant Care IADL | 22 | 45% | 0.579 | 0.2676 | -0.006 | -0.019 |
| Trans Prov to/from Work | 20 | 35% | 0.140 | 0.0031 | -0.015 | -0.051 |
| Individual Skills Training | 4 | 25% | 0.292 | 0.0349 | -0.005 | -0.036 |
| DSA Facility Attendant Care | 177 | 10% | 0.328 | 0.0511 | -0.027 | -0.033 |

Additional evaluation using odds ratio and cohort analysis was conducted for each of these services to help determine their overall impact on an individual's outcome and to try and understand why some services may have been detrimental to a person's ultimate success in obtaining community employment.

It is interesting to note that while in each of these cases, the majority of people receiving the service were unable to achieve successful community employment if they had received the service previously; none of these services received a level of statistical significance on their own. This indicates there are potentially other factors occurring in

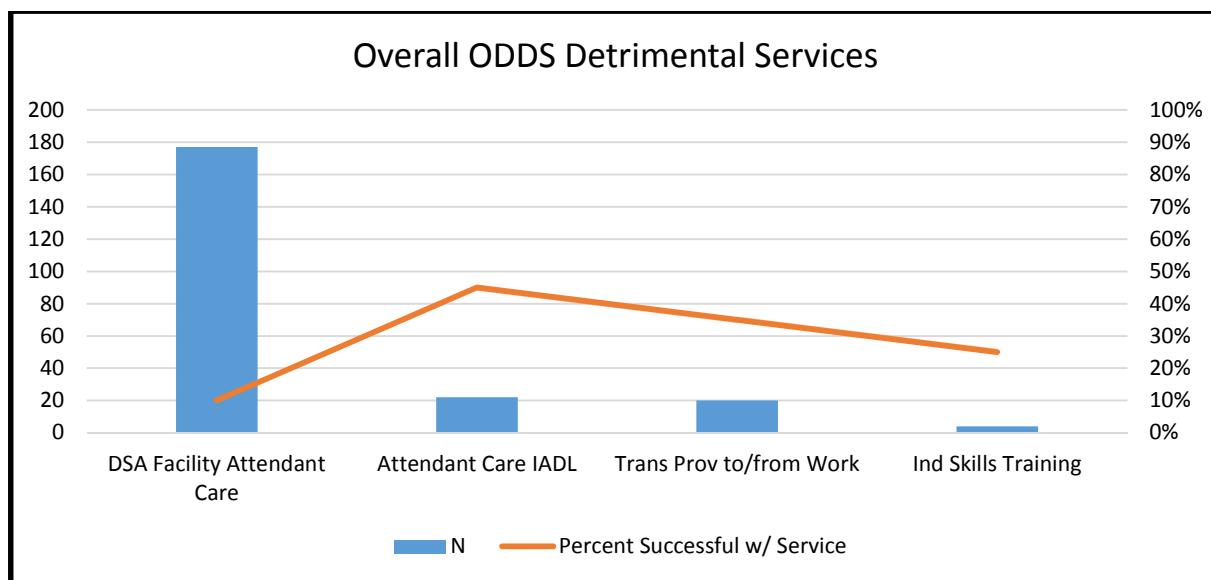
addition to the services themselves. Most likely, this is a result of the reasons the person is utilizing the service rather than an impact of the service on a person's ability to work.

This study found that only 25% of the individuals that had received Individual Skills Training were successful in obtaining community employment and overall were 0.3 % less likely chance for a successful outcome, however the service did not meet a level of statistical significance ($p=0.29$).

Thirty-five percent of the individuals receiving Transportation Provider To/From Work Supports were successful in transitioning into a community job and overall, were found to have a 0.5% less likely chance for a successful outcome, however the service did not meet a level of statistical significance ($p=0.14$).

This study found that less than half (45%) of the individuals that had received IADL supports were successful and had a 0.78% less likely chance for success however, the service did not meet a level of statistical significance ($p=0.58$).

Only ten-percent of individuals that had received Facility Attendant Care were found to be successful in obtaining community employment and overall were 0.84% less likely to succeed in obtaining employment outside of the facility. However, the service did not meet a level of statistical significance ($p=0.33$).



Graph 4.2 Overall ODDS Detrimental Services

Support Services neither Beneficial nor Detrimental

Other services offered by ODDS such as Discovery and DSA Community Services appeared to offer no substantial benefit between a person having received the service and an eventual successful or unsuccessful outcome. These services may be classified as neither specifically helping nor hurting an individual's chances at a successful outcome when examined in the aggregate but may provide certain individuals with specific benefits depending on other factors. It does not appear that these services present any significant likelihood of harming a person's eventual success but, they may inadvertently increase the time it takes to achieve an outcome overall.

Attendant Care Home and Community Services is a program that provides one-on-one personal services for individuals in either a residential or a community setting. These services include assistance with things such as toileting, hygiene or meal preparation. Individuals participating previously in Attendant Care Home and Community Services were found to be successful about 52% of the time ($N=421$, $p=0.67$).

Day Support Activities (DSA) Community Attendant Care is a program that provides one-on-one services to assist a person with daily living activities in a community setting. These activities can be a wide variety of possibilities depending on the desires of the individual receiving the service. Generally, these are typically some form of community recreational activity or in some instances support while volunteering at a community program or location. Overall, individuals having received this service were successful in community employment about 48% of the time ($N=177, p=0.70$)

Community Transportation Transit Pass is a monetization program where the state pays for the person receiving the service to be issued a commercial transit pass allowing them to access bus, train or other commercially available transportation services on a regular or as needed basis. About 49% of the participants in this program were found to be successful in community employment during this research ($N=147, p=0.54$). While transportation in general was found to be a highly desirable indicator of potential success, this particular service is also heavily utilized for recreational and social transportation by recipients and may have been a factor in decreasing its success rate.

DSA Community Services is a program that provides support for an individual's daily living needs outside of a residential setting. This support covers a very wide variety of options and is only limited by what a person chooses to do with their time. Overall, 52% of individuals having received this service were successful at gaining community employment ($N=145, p=0.77$).

Discovery is a program that allows an individual to explore, or 'discover' the world of employment. It takes place at three separate work sites based upon what a person's interests are going into the program. It allows the person to see what is involved in each job

and gives them an opportunity to try different aspects of the job that they would be required to do if they were eventually hired into a like position. Once Discovery is completed, it provides a formalized written evaluation at the end of the program that discusses the person's strengths, abilities and weaknesses and discusses whether this could be a potentially good fit for the participant when looking for future employment.

Overall, about 53% of prior Discovery participants were able to achieve community employment ($N=175$, $p=0.70$). This was a surprising outcome as this is a highly touted program by providers, VR Counselors and personal advocates. Most likely, this outcome can be attributed to a misunderstanding that occurred earlier in the program's rollout where it was used as a quasi-vocational assessment rather than a career exploration tool. The state has implemented considerable changes in how the program is managed now and most likely; these results are biased due to the program's initial misuse.

Commercial Transportation to/from Work Services is a program that pays for an individual's transportation support to and from their job site. This is different from other transit pass or transportation supports in that this pays only for a person to get to and from their place of work when their work schedule is not conducive to a regularly scheduled or operated mass transit service.

Overall, 48% of persons previously using Commercial Transportation to/from Work Services were able to achieve community employment during this study. This is potentially due to this service being widely used for transportation support to and from a sheltered workshop, small group or employment path service in addition to being allowed for supporting a typical community job ($N=31$, $p=0.74$).

Table 4.3 ODDS services with no statistical impact

| Service | N | Percent Successful w/ Service | Chi-Square Sig. | Levine's Sig. | Somers' D | Cramer's V |
|-------------------------|-----|-------------------------------|-----------------|---------------|-----------|------------|
| Atndnt Care Home/Comm | 421 | 52% | 0.674 | 0.584 | 0.014 | 0.014 |
| Comm Trans Mileage | 284 | 52% | 0.628 | 0.332 | 0.016 | 1.073 |
| DSA Comm Attendant Care | 177 | 48% | 0.704 | 0.4476 | 0.013 | 0.013 |
| Discovery | 175 | 53% | 0.704 | 0.4475 | 0.011 | 0.013 |
| Comm Transit Pass | 147 | 49% | 0.538 | 0.2185 | -0.016 | -0.021 |
| DSA Community Services | 145 | 52% | 0.767 | 0.553 | 0.008 | 0.010 |
| Comm Trans To/From Work | 31 | 48% | 0.740 | 0.5104 | -0.004 | -0.011 |

Additional evaluation using odds ratio and cohort analysis was conducted for these services. It was determined that any of these services individually most likely did not have a significant positive or negative effect on outcomes. Additionally, the successful outcome percentages for individuals that had received these services were found to be no better than chance, and all outcomes were within the margin of error for being equal.

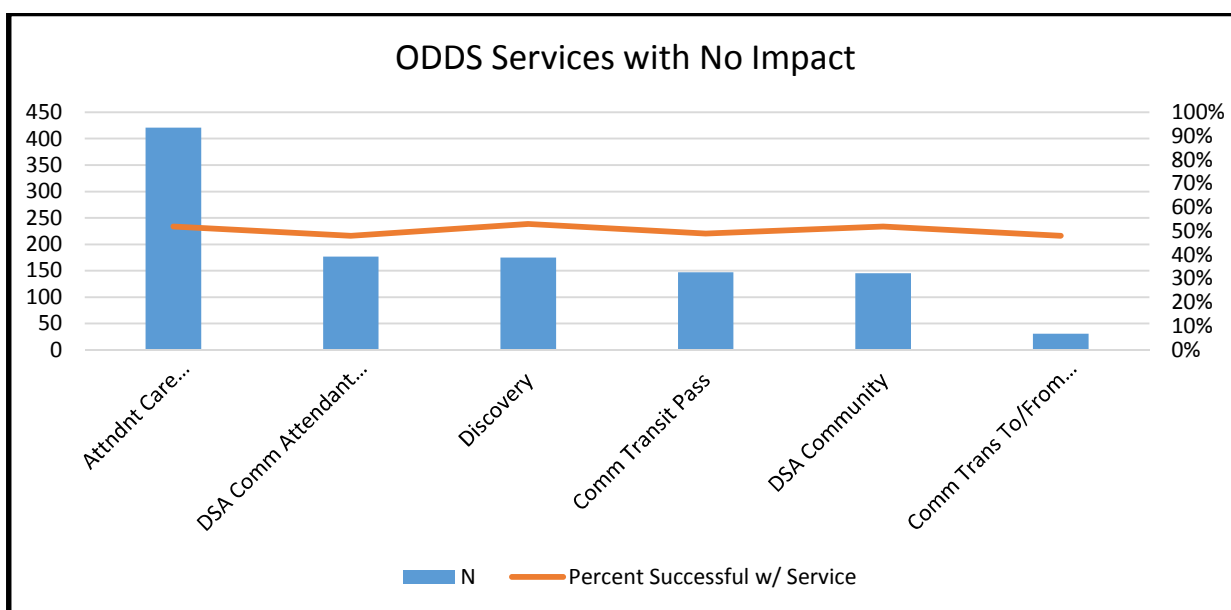
Individuals that had received Community Transportation Mileage services were found to have a 1.07% greater chance of success (N=284, $p=0.70$). These values are within the margin of error for an equal chance of achieving either a successful or an unsuccessful outcome, and were not found to statistically significant.

Individuals that had received Attendant Care Home or Community based services were found to have a 1.02% greater chance for success (N=421, $p=0.67$). These values are within the margin of error for an equal chance of achieving either a successful or an unsuccessful outcome, and were not found to statistically significant.

Individuals that had received Community Transportation To/From Work services were found to have a 0.88% less likely chance for success (N=31, $p=0.74$). These values are within the margin of error for an equal chance of achieving either a successful or an unsuccessful outcome, and were not found to statistically significant.

Individuals that had received Discovery services were found to have a 1.06% greater chance for success ($N=75$, $p=0.70$). These values are within the margin of error for an equal chance of achieving either a successful or an unsuccessful outcome, and were not found to be statistically significant.

Individuals that had received DSA Community Attendant Care were found to have a 1.06% greater chance for success ($N=177$, $p=0.70$). These values are within the margin of error for an equal chance of achieving either a successful or an unsuccessful outcome, and were not found to be statistically significant.



Graph 4.3 ODDS Services w/ No Impact

Potentially Beneficial Services

One last area of services was identified as part of this study. Some services were shown to have had more than half of all participants achieving a positive employment outcome however; they just did not quite meet the statistical significance requirements as being clearly beneficial. These are identified here as potentially beneficial services.

Small Group Supported Employment is an employment service primarily established to help build skills that will enable a person to move into a community job. A small group supported employment provider can work with up to eight individuals at one time in a single setting. This service is frequently used in janitorial, landscaping and sometimes in hospitality settings. One of the benefits of this type of program, especially for former sheltered workers, is that it allows them to continue working with their friends and peers while working in a more traditional integrated setting. Of the people that had previously participated in Small Group Supported Employment Services, 127 out of 240 were successful in obtaining and maintaining community employment ($N=240, p=0.45$).

Day Support Activities Community Supports are a wide variety of services that take place in the community. These services are provided one-on-one with the individual and are designed to help them with socialization, recreation or any other non-employment related facet outside of a residential setting. About 52% of the 145 individuals that had participated in this service were able to obtain and maintain community employment ($N=145, p=0.76$).

Day Support Activities Facility Services are similar in nature to the DSA Community Supports just discussed, however they occur in a facility setting rather than in the community. These activities tend to be more leisure or recreational focused than their community based counterparts however. Approximately 57% of the 122 individuals that had received this service previously were able to obtain and maintain community employment ($N=122, p=0.14$).

Behavior Consultation and Assessment Training is a one-on-one service in which the recipient receives counseling, training and assistance with behavior concerns. This could be counseling and training in dealing with new or stressful situations, work to help the person

understand how to better deal with anger, fear, or other like activities. Overall, sixty-seven percent of the individuals that had previously received this service were able to obtain and maintain community employment (N=12, $p=0.28$).

Attendant Care Activities for Daily Living is a one-on-one support service that assists individuals with daily living requirements. This could be things such as meal preparation, shopping, dressing, medication management or other similar items. This service is typically offered for individuals with higher levels of support needs and as such, only eight individuals in this study had received the service. However, of the eight individuals that had used this service previously, six were successful in obtaining and maintaining community employment (N=8, $p=0.17$).

Behavior Support Services is a service very similar to the Behavior Consultation and Assessment Training previously discussed however, is more intensive and ongoing in nature. This service typically follows the use of the consultation and assessment training and is typically seen offered to individuals with more significant behavioral support requirements. Overall, seven individuals in this research study were identified as having received these supports and approximately 71% of those were successful in obtaining community employment (N=7, $p=0.28$).

Table 4.4. Potentially Beneficial ODDS Services

| Service | N | Percent Successful w/ Service | Chi-Square Sig. | Levine's Sig. | Somers' D | Cramer's V |
|---------------------------|-----|-------------------------------|-----------------|---------------|-----------|------------|
| Small Group | 240 | 53% | 0.455 | 0.135 | 0.023 | 0.026 |
| DSA Community | 145 | 52% | 0.767 | 0.553 | 0.008 | 0.010 |
| DSA Facility | 122 | 57% | 0.146 | 0.003 | 0.035 | 0.050 |
| Behav Conslt Asmnt/Trng | 12 | 67% | 0.283 | 0.032 | 0.009 | 0.037 |
| Attendant Care ADL | 8 | 74% | 0.178 | 0.007 | 0.009 | 0.046 |
| Behavior Support Services | 7 | 71% | 0.284 | 0.032 | 0.007 | 0.037 |

Additional evaluation using odds ratio and cohort analysis was conducted for each of these services to help determine their overall impact on an individual's outcome and to better understand why the service appeared beneficial, but didn't quite rise to the level of statistical significance.

It was found that individuals that had received ODDS behavior support services were 2.39 times more likely to be successful than those without this service (71% successful) however, the service did not independently meet a level of statistical significance ($N=7$, $p=0.28$).

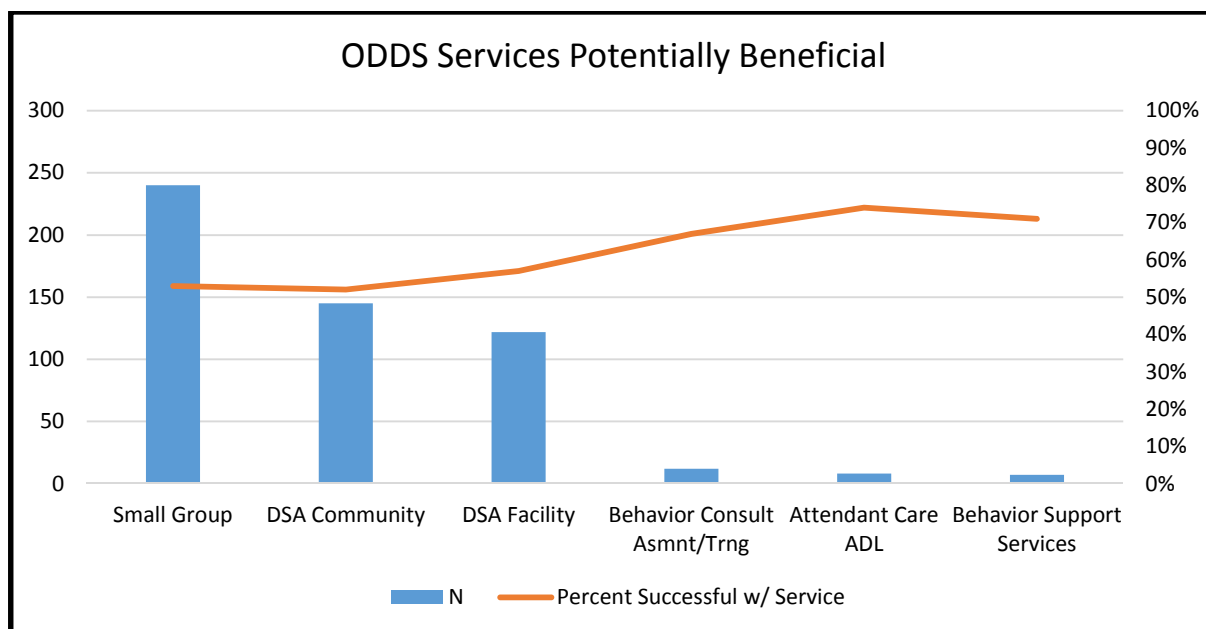
Individuals that had received Attendant Care with support for Activities for Daily Living (ADL) presented participants with a 2.9% increased chance of success (74% successful) however, the service did not independently meet a level of statistical significance ($N=8$, $p=0.18$).

Individuals that had received Behavior Consultation and Assessment Services presented participants with a 1.9% increased chance for success (67% successful) however, the service did not independently meet a level of statistical significance ($N=12$, $p=0.28$).

Individuals that had participated in DSA Facility Services presented participants with a 1.3% increased chance of success (57% successful) however, the service did not independently meet a level of statistical significance ($N=122$, $p=0.15$).

Individuals that had participated in DSA Community Services presented participants with a 1.1% increased chance of success (52% successful) however, the service did not independently meet a level of statistical significance ($N=145$, $p=0.55$).

Individuals that had participated in Small Group Supported Employment services presented participants with a 1.1% greater chance for success (53% successful) however, the service did not independently meet a level of statistical significance (N=240, $p=0.46$).



Graph 4.4 Overall ODDS Potentially Beneficial Services

Additional Support Services Analysis via Employment Outcome Systems Survey

While the primary source of information used in this study came from past billing records and program service data to determine if a person had received and participated in a particular service or not, additional analysis was also performed on data obtained from the Employment Outcome Systems Survey (EOS).

EOS is a dataset that contains information provided by employers on an individual's paid hours worked, the wages earned and which specific programs they had received. Data for this survey is collected from all disability service providers in Oregon and must be submitted under the terms of their Medicaid contracts twice a year.

Testing for significance within the EOS dataset was accomplished by a regression analyses as well as two-decision tree analysis; CHAID and C5.1. These analyses looked at

25 variables that recorded the number of hours that participants had participated in either employment path or small group supported employment services.

Five variables from within the EOS surveys were identified as statistically significant during this analysis. However, the only statistically beneficial variable identified was for individuals that had participated in Small Group Supported Employment during the third quarter of 2015 ($N=104$, $\beta = 0.031$, $p=0.001$).

Individuals that had participated in Small Group Supported Employment during the third quarter of 2015 were found to be statistically more likely to close successfully ($p=0.001$). This would likely indicate that small group supported employment in an individual's past exposed the participant to community work and this real world type experience may have helped lead to community employment. Additionally, individuals that had participated in Small Group Supported Employment during the first quarter of 2017 were statistically less likely to close successfully ($p=0.000$). This would be logical as if individuals were still actively participating in small group setting in the first quarter of 2017; they were most likely not working in the community yet when this research studies data was collected.

Individuals that had participated in Employment Path Community services during the third quarter of 2016 ($N=128$, $\beta = -0.02$, $p=0.017$) were also less likely to have closed successfully with VR during this survey period. This again is most likely an indication that these individuals were still in the process of transitioning from the sheltered environment into community employment and were using these services to gain experience outside of the workshop in preparation for community employment.

Individuals that had participated in Employment Path Facility services during the first quarter of 2017 (N=125, $\beta = -0.016$, $p=0.00$) or the first quarter of 2016 (N=93, $\beta = -0.016$, $p=0.043$) were less probable to have closed successfully with VR during this survey period. This is most likely an indication that these individuals were still actively working in the workshop environment and had not yet begun the process of moving into community employment.

Table 4.5 EOS Data

| Service Category | B | Std. Error | Wald | Sig. | Exp (B) |
|---|--------|------------|--------|-------|---------|
| Employment Path Facility Participant Paid Hours Worked from EOS Q1 2017 | -0.016 | 0.004 | 13.476 | 0.000 | 0.985 |
| Small Group Supported Employment Participant Paid Hours Worked from EOS Q1 2017 | -0.028 | 0.007 | 15.311 | 0.000 | 0.972 |
| Small Group Supported Employment Paid Hours Worked from EOS Q3 2015 | 0.031 | 0.010 | 10.096 | 0.001 | 1.032 |
| Employment Path Community Participant Paid Hours Worked from EOS Q3 2016 | -0.02 | 0.008 | 5.664 | 0.017 | 0.980 |
| Employment Path Facility Participant Paid Hours Worked from EOS Q1 2016 | -0.016 | 0.008 | 4.094 | 0.043 | 0.984 |

Additional analysis using a CHAID predictor algorithm discovered that individuals historically participating in Employment Path Community services χ^2 (1, N=475, 16.64, $p=0.00$) and Small Group Supported Employment χ^2 (1, N=240, 26.16, $p=0.00$) were statistically more likely to achieve a successful closure than those individuals that had not.

This was further validated through ANOVA testing with Employment Path Community being statistically significant (F1, 401, 19.75, $p=0.000$) and Small Group Supported Employment also being significant (F1, 451, 20.90, $p=0.00$).

Demographic Data:

While the primary focus of this study was to research the services and programs former sheltered workers had participated in, aggregate demographic data was also evaluated to determine if certain demographic attributes were more or less likely to lead to successful employment outcomes. This demographic data included information on the individual's educational backgrounds, disability severity levels, ages, marital status and regional location around the state amongst other things.

Analysis was performed across all demographic categories to look for potential interaction at the aggregate level and testing for significance was accomplished via both regression analysis and by statistical significance due to the types of variables found in this category.

Demographic Data That Appears to Influence Employment Outcomes

A number of demographic variables appeared to have a potential influence on a person's ability to achieve an employment related outcome. Each of these variables is discussed below however, it is important to note that in most instances each of these variables are likely to be influenced by other additional factors and must be examined in context.

Demographic Data Supports Intensity Scale: Positive Influence

The Supports Intensity Scale (SIS) evaluates the practical support requirements of a person with an intellectual disability through a positive and thorough interview process. This SIS is a twelve-page interview and profile designed by the American Association on Intellectual and Developmental disabilities that measures support requirements in 57 life

activities and 28 behavioral and medical areas. The assessment is done through an interview with the individual, as well as those who know the person well.

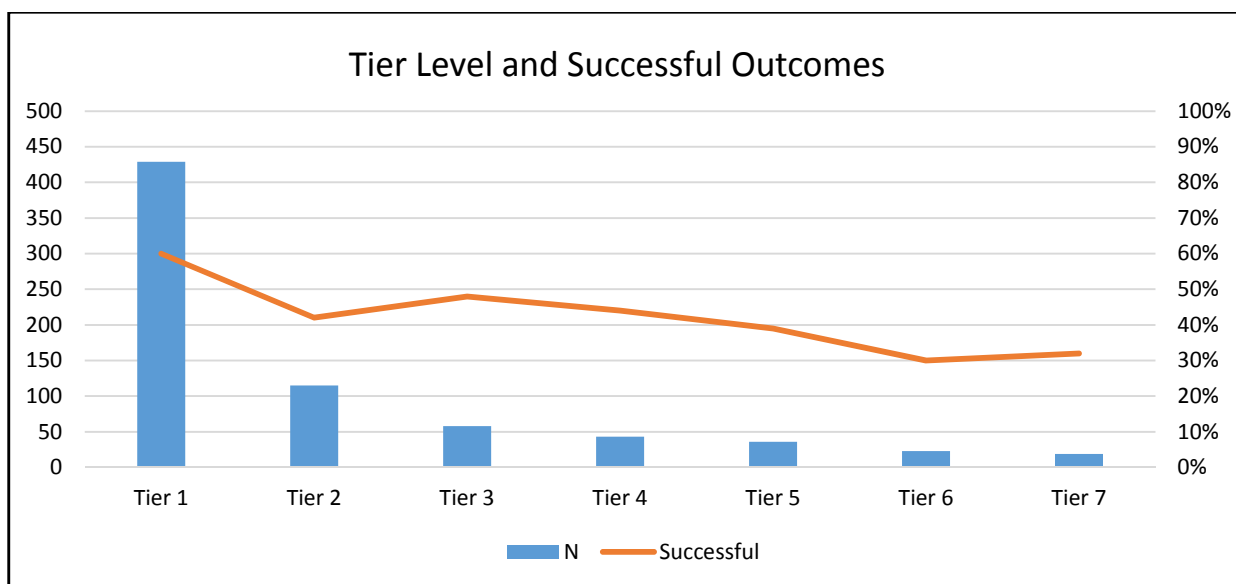
Specifically, the SIS measures support needs in the areas of home living, community living, lifelong learning, employment, health and safety, social activities, and protection and advocacy (AAIDD, 2018). These results are then provided in a seven-tier structure where tiers one – six reflect a person's evaluated need for supports with one being fewer and six being more extreme. Tier level seven is considered an 'exception' and is for individuals that required more intense or specialized services outside of any of the other categories. An example of a tier seven result may be a person that could potentially require two-on-one assistance with one facet of their daily living activities but does not require that level of assistance in all areas.

SIS tier level one participants were found to have a greater statistically significant likelihood of achieving a more successful outcome than any other tier level. This would make sense as a person identified as tier one would typically require the least amount of assistance with daily living and other support related needs. A person identified as SIS tier one was found to be 3.18% more likely to be successful than any other tier. Statistical significance was found at the 95% confidence level for this variable (N=429, 60% successful, $p=0.05$).

As would be expected, a slight overall decrease was noted in successful outcomes as a tier level increased. However, when evaluating tier levels two - seven, there was no statistically significant difference found in any other tier classification. This was surprising, as with tier seven being identified as an outlier or exceptional needs evaluation, we would expect to see a decrease in the overall success rate based on the tier one findings.

Table 4.6 Individual Tier Breakout

| Tier Level | N | Successful | B | Std Error | Wald | Sig | Exp(B) |
|------------|-----|------------|--------|-----------|-------|-------|--------|
| Tier 1 | 429 | 60% | 1.155 | 0.591 | 3.826 | 0.050 | 3.175 |
| Tier 2 | 115 | 42% | 0.462 | 0.612 | 0.569 | 0.450 | 1.587 |
| Tier 3 | 58 | 48% | 0.625 | 0.641 | 0.952 | 0.329 | 1.869 |
| Tier 4 | 43 | 44% | 0.452 | 0.676 | 0.447 | 0.504 | 1.571 |
| Tier 5 | 36 | 39% | 0.368 | 0.692 | 0.283 | 0.594 | 1.445 |
| Tier 6 | 23 | 30% | -0.066 | 0.769 | 0.007 | 0.932 | 0.936 |
| Tier 7 | 19 | 32% | -0.068 | 0.778 | 0.005 | 0.950 | 0.947 |



Graph 4.5 Tier Levels and Successful Outcomes

Demographic Data Vocational Rehabilitation Assessed Track Level: Positive Influence

Vocational Rehabilitation has three service levels referred to as tracks. These are used to identify an assessed level of need for VR services. Track 1 is the lowest with track three indicating the highest level of support needs.

Like the SIS Tier level, an individual's vocational rehabilitation track level was also found to be a significant indicator of an overall successful outcome ($p=0.00$). Overall 755 individuals were classified as track one (88% of all individuals, 52% successful), 65

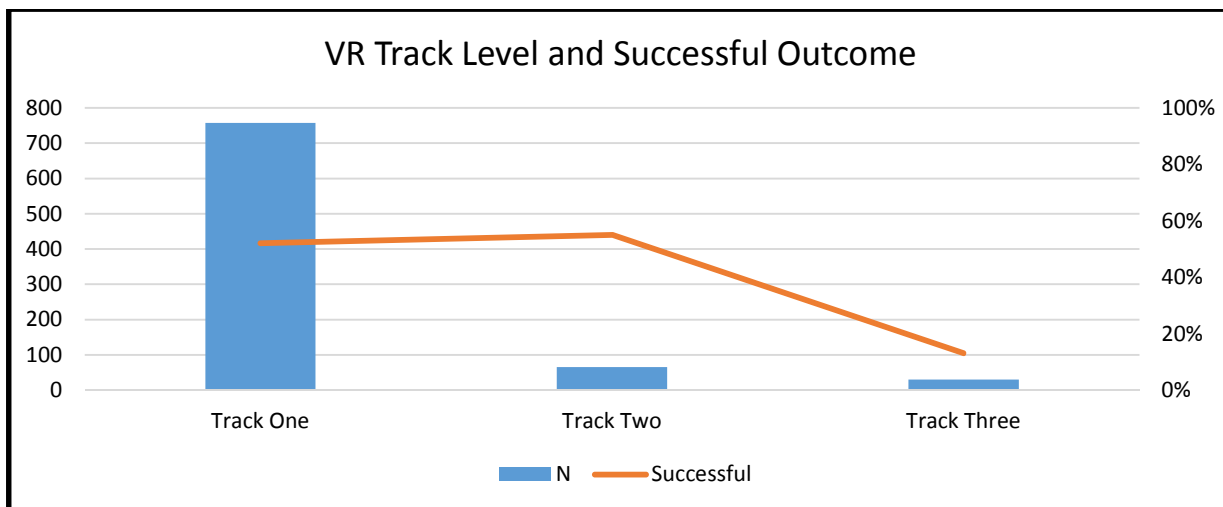
individuals were classified as track two (55% were successful) and 30 individuals were classified as track three (13% were successful).

Interestingly, individuals identified as track two (N=65, 55% Successful, $p=0.99$) were found to have a slightly better chance of successful outcome over those individuals identified as track one (N=757, 52% Successful, $p=0.06$). This is most likely due to the lower number of individuals assessed into this category but at this point, the reason is still unclear. Both track one and track two individuals were significantly more likely to have a successful outcome over individuals identified as track three (N=30, 13% Successful, $p=0.99$).

Even though the category as a whole was significant, none of the three priority levels independently met the criteria for statistical significance. There were however strong indications that individuals classified as priority three were significantly less likely to be successful overall (N = 30, $\beta = -18.105$, $p=0.10$). I believe the comparatively low number of individuals in this category is the only reason priority three did not meet the significance criteria.

Table 4.7. VR Track Level and Successful Outcomes

| Service | N | Successful | B | Sig |
|-------------|-----|------------|---------|-------|
| Track One | 757 | 52% | -1.497 | 0.065 |
| Track Two | 65 | 55% | 2.036 | 0.993 |
| Track Three | 30 | 13% | -18.105 | 0.996 |



Graph 4.6 VR Track Level and Successful Outcomes

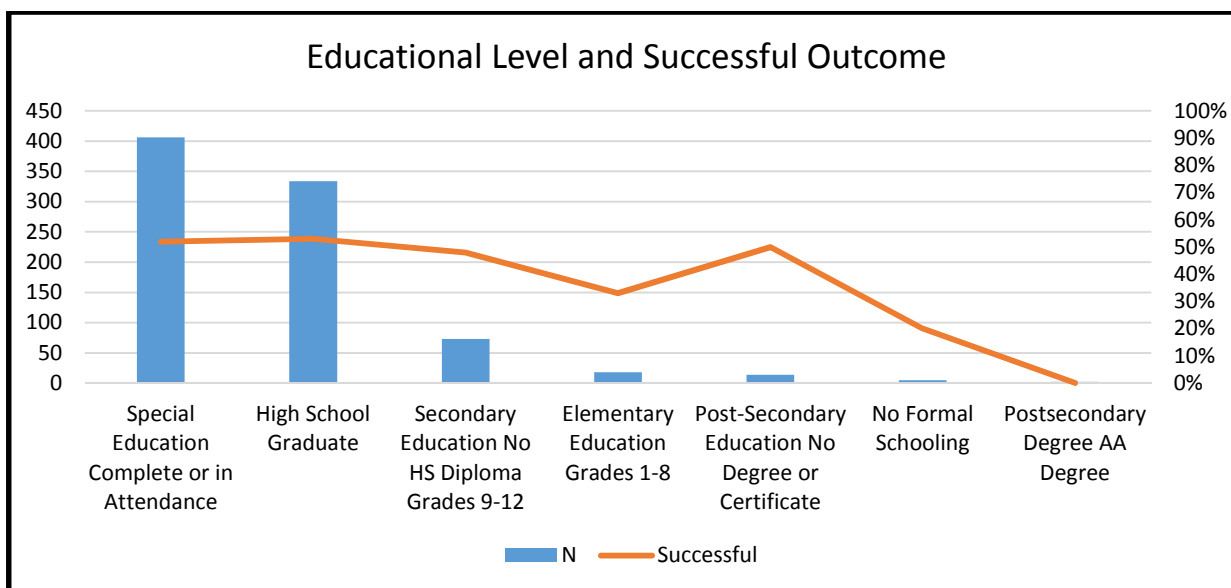
Demographic Data Education Level: Positive Influence

Testing for significance in the Individual Education Level Category was accomplished through regression analysis and individual variable evaluation. This area looked at seven possible categories of formal education accomplishment.

The level and type of education an individual had completed was identified as a statistically significant indicator. Individuals identified as “Special Education Complete or in Attendance” were found to have a significantly less likely chance of successful outcomes ($N=406$, $\beta = -1.72$, $p=0.02$). Additionally, individuals identified as having an elementary education less than 8th grade ($N=18$, $\beta = -0.15$, $p=0.53$, 33% successful) were also less likely to achieve a successful outcome.

Table 4.8. Education Level

| Education Level | N | Successful | B | Sig. |
|---|-----|------------|--------|-------|
| Special Education Complete or in Attendance | 406 | 52% | -1.718 | 0.016 |
| High School Graduate | 334 | 53% | 2.877 | 0.077 |
| Secondary Education No HS Diploma Grades 9-12 | 73 | 48% | 7.17 | 0.993 |
| Elementary Education Grades 1-8 | 18 | 33% | -0.147 | 0.531 |
| Post-Secondary Education No Degree or Certificate | 14 | 50% | -0.064 | 0.868 |
| No Formal Schooling | 5 | 20% | 15.043 | 0.996 |
| Postsecondary Degree AA Degree | 2 | 0% | 0.16 | 0.839 |



Graph 4.7 Education Level and Successful Outcomes

Demographic Data Vocational Rehabilitation Office: Positive and Negative Influence

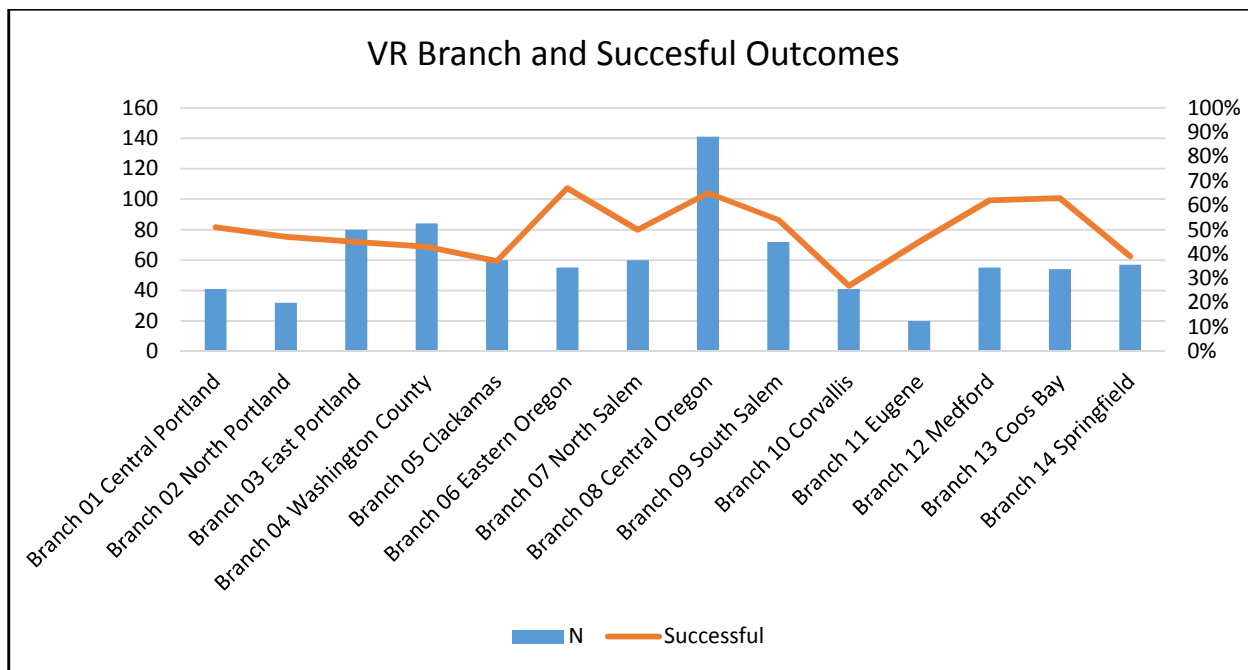
The Vocational Rehabilitation Branch Office where a person received services appeared to play a very significant role in terms of their eventual success at achieving an employment outcome. Specifically, the Central Oregon Vocational Rehabilitation Office (Branch Office Eight) was found to have a 65% success rate (N=141, $p=0.05$). Likewise, the Corvallis Oregon Office (Branch Office 10) was found to have achieved only a 27%

success rate overall ($N=41$, $p=0.16$) however, only the Central Oregon Office reached statistical significance.

This wide disparity between offices is challenging to quantify. While clearly the expertise, ability and influence an individual counselor has is an important aspect of a person's eventual success, other factors such as the local unemployment rate, types of local industry, and the regional economy must play a part in the equation as well.

Table 4.9. VR Branch Office Outcomes

| Branch Name | N | Successful | B | Sig. |
|-----------------------------|-----|------------|--------|-------|
| Branch 01 Central Portland | 41 | 51% | 0.385 | 0.771 |
| Branch 02 North Portland | 32 | 47% | 0.421 | 0.756 |
| Branch 03 East Portland | 80 | 45% | -0.120 | 0.925 |
| Branch 04 Washington County | 84 | 43% | 0.316 | 0.793 |
| Branch 05 Clackamas | 60 | 37% | 0.471 | 0.732 |
| Branch 06 Eastern Oregon | 55 | 67% | -0.543 | 0.793 |
| Branch 07 North Salem | 60 | 50% | 1.042 | 0.428 |
| Branch 08 Central Oregon | 141 | 65% | 0.327 | 0.817 |
| Branch 09 South Salem | 72 | 54% | 1.586 | 0.230 |
| Branch 10 Corvallis | 41 | 27% | 2.154 | 0.161 |
| Branch 11 Eugene | 20 | 45% | 0.439 | 0.425 |
| Branch 12 Medford | 55 | 62% | 1.346 | 0.386 |
| Branch 13 Coos Bay | 54 | 63% | 1.661 | 0.229 |
| Branch 14 Springfield | 57 | 39% | 0.471 | 0.793 |



Graph 4.8. VR Branch and Outcomes

Demographic Data County of Residence: Positive and Negative Influence

An individual's county of residence was also identified as being a statistically significant predictor of successful and unsuccessful outcomes. However, like the VR Branch Office, this variable also is influenced by the local economy, unemployment rates and business an industry native to the area.

While no county was found to be individually significant as an indication of success, Deschutes County (N=98, 68% successful closure), Umatilla County (N=34, 65% successful closure) and Hood River County (N=11, 73% successful closure) all had above average success rates.

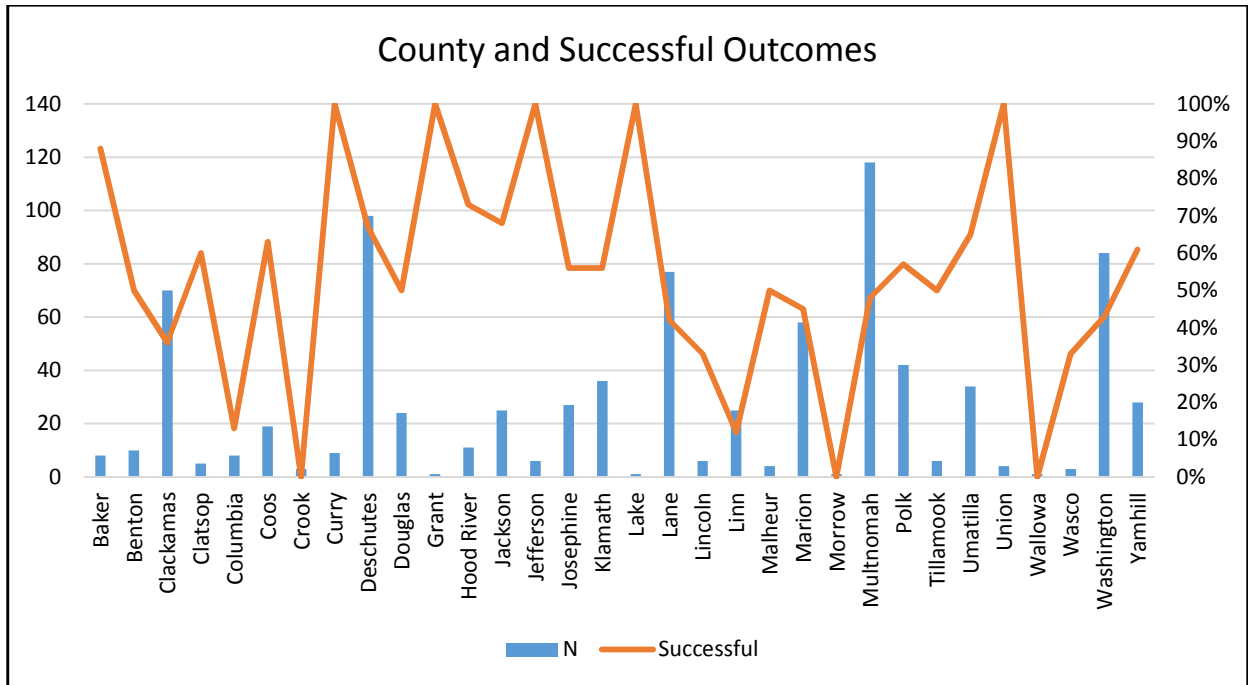
On the other end of the spectrum, Linn County was found to be a statistically significant variable in unsuccessful closures (N=25, 12% successful closure, $p=0.01$). Additional testing predicated a significantly negative multiplier for residents of Linn County ($\beta = -3.53$, $\text{Exp}(B) = 0.029$, $p=0.01$).

Even though both an individual's county and VR office were identified as being significant in successful and unsuccessful closures, neither variable on its own is the sole factor in an individual's successful or unsuccessful closure. These two variables should be viewed as an influencer rather than predictor of potential outcome.

It is considered quite probable that both the County of Residence and VR Branch Office are driven by the same outside influences, such as unemployment levels, propensity to hire individuals with disabilities or other organic factors and may be measuring similar effects. However, as this research identified different probabilities of success in counties with more than one vocational rehabilitation office so, these results have been included in this study.

Table 4.10 County of Residence

| County | N | Successful | B | Sig |
|------------|-----|------------|---------|-------|
| Baker | 8 | 88% | 3.174 | 0.185 |
| Benton | 10 | 50% | -0.922 | 0.436 |
| Clackamas | 70 | 36% | -0.212 | 0.881 |
| Clatsop | 5 | 60% | 1.036 | 0.545 |
| Columbia | 8 | 13% | -1.527 | 0.383 |
| Coos | 19 | 63% | -0.040 | 0.979 |
| Crook | 3 | 0% | -14.440 | 0.983 |
| Curry | 9 | 100% | 13.233 | 0.974 |
| Deschutes | 98 | 67% | 1.121 | 0.470 |
| Douglas | 24 | 50% | -0.754 | 0.622 |
| Grant | 1 | 100% | 15.110 | 0.990 |
| Hood River | 11 | 73% | 1.814 | 0.237 |
| Jackson | 25 | 68% | 0.490 | 0.795 |
| Jefferson | 6 | 100% | 14.430 | 0.977 |
| Josephine | 27 | 56% | -0.325 | 0.862 |
| Klamath | 36 | 56% | 0.551 | 0.723 |
| Lake | 1 | 100% | 14.424 | 0.991 |
| Lane | 77 | 42% | 0.381 | 0.775 |
| Lincoln | 6 | 33% | -2.222 | 0.121 |
| Linn | 25 | 12% | -3.152 | 0.014 |
| Malheur | 4 | 50% | 1.251 | 0.595 |
| Marion | 58 | 45% | -0.814 | 0.158 |
| Morrow | 1 | 0% | -12.320 | 0.992 |
| Multnomah | 118 | 48% | 0.665 | 0.626 |
| Polk | 42 | 57% | -0.299 | 0.639 |
| Tillamook | 6 | 50% | -0.537 | 0.612 |
| Umatilla | 34 | 65% | 1.978 | 0.360 |
| Union | 4 | 100% | 15.719 | 0.979 |
| Wallowa | 1 | 0% | -13.143 | 0.991 |
| Wasco | 3 | 33% | 0.608 | 0.743 |
| Washington | 84 | 43% | 0.117 | 0.923 |
| Yamhill | 28 | 61% | 0.490 | 0.795 |



Graph 4.9 County of Residence

Demographic Data Citizenship: Potentially Beneficial

An individual’s citizenship status was also identified during the analysis as being a statistically significant indicator of success ($p=0.05$). While the overall significance level met the threshold for statistical relevance, due to the very low number of non-US Citizens in the analysis sample (N=8), citizenship should not be considered as an indicator and this analysis is unable to determine the true impact of citizenship on outcomes. However, it is interesting to note that all eight non-US Citizens were successful.

Table 4.11 Citizenship

| Citizenship | N | Successful |
|-------------|-----|------------|
| US Citizen | 837 | 51% |
| Other | 5 | 100% |
| Legal Alien | 3 | 100% |

Demographic Data That Does Not Appear to Influence Employment Outcomes

A number of demographic variables appeared to have little to no potential influence on a person's ability to achieve an employment related outcome. Each of these variables is discussed below however, it is important to note that in most instances each of these variables are likely to be influenced by other additional factors and must be examined in context.

Most surprisingly, no correlation was identified between a person's disability impairment assessment, age, gender or living situation and their ultimate success with achieving community employment. This contradicts many of the widely held beliefs in relation to disability and work and may bolster support for the author's hypothesis that exposure to community activities and realistic work environments is the most important attribute to a person's ultimate success with employment.

Demographic Data Disability Impairment: Not Influential

Testing for significance in the Disability Impairment Category was accomplished through regression analysis and evaluation. This area looked at each of the 15-possible medical and intellectual disabilities under which individuals may qualify for program services.

The majority of individuals were identified under the category of "Cognitive Impairment" (N=666 or 78% of all participants, 53% successful overall). Overall, disability impairment was not a statistically significant indicator of successful outcomes ($p = 0.32$).

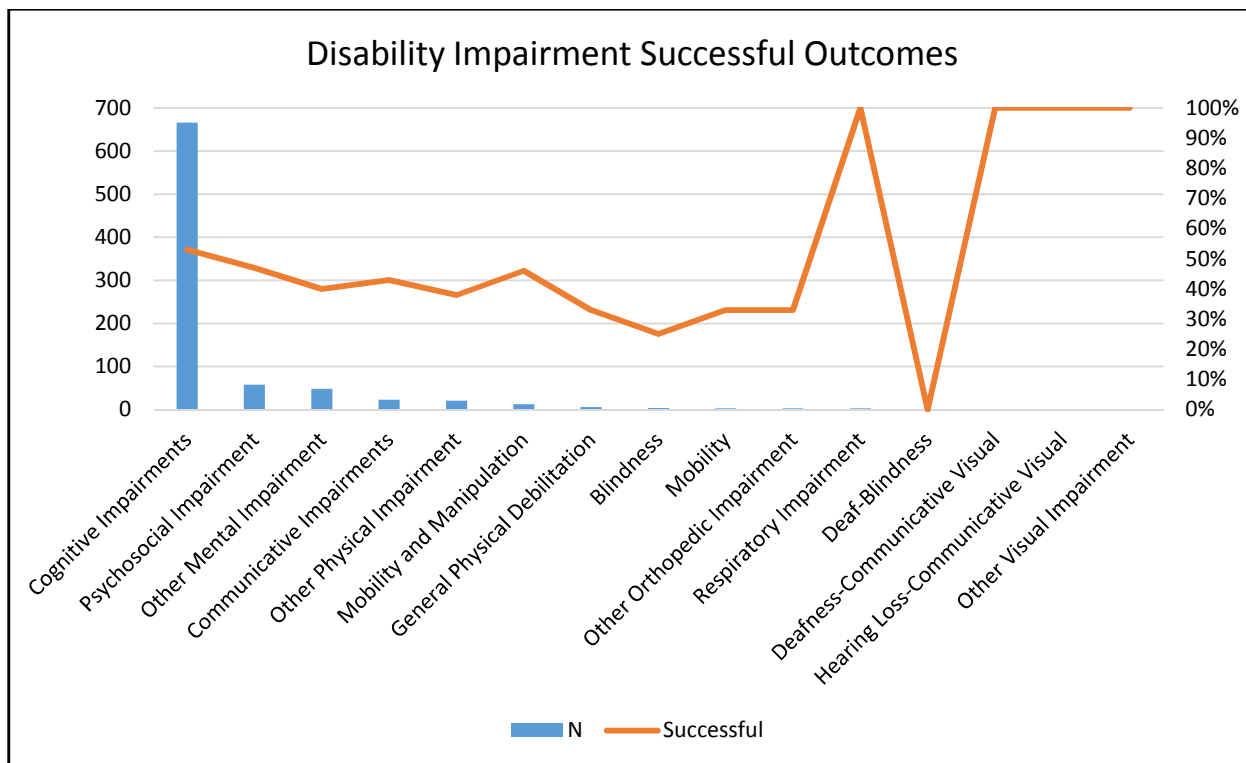
There were no statistically significant variables identified within this analysis that correlated either positively or negatively with a successful participant outcome. However, individuals identified as "Other Mental Impairment" (N=19) were shown as having a 60% rate of being unsuccessful at achieving a successful outcome.

There were slightly negative indicators for those individuals identified as “Other Physical Impairment” (N=21, $\beta = -1.03$, $p=1.00$) however, due to a low number of participants, this failed to rise to the level of significance overall.

An additional regression analysis was conducted that included all disability/impairment/eligibility data sets to identify any potential hidden interactions and this evaluation also failed to identify any positive or negative correlations within the disability impairment data set.

Table 4.12 Disability Impairment

| Disability Impairment | N | Successful | B | Sig. |
|-----------------------------------|-----|------------|-------|-------|
| Cognitive Impairments | 666 | 53% | 9.11 | 0.993 |
| Psychosocial Impairment | 58 | 47% | 7.17 | 0.993 |
| Other Mental Impairment | 48 | 40% | 16.68 | 0.993 |
| Communicative Impairments | 23 | 43% | 3.56 | 0.993 |
| Other Physical Impairment | 21 | 38% | 5.13 | 1.000 |
| Mobility and Manipulation | 13 | 46% | 17.91 | 0.993 |
| General Physical Debilitation | 6 | 33% | 8.15 | 1.000 |
| Blindness | 4 | 25% | 10.86 | 0.993 |
| Mobility | 3 | 33% | 0.56 | 0.993 |
| Other Orthopedic Impairment | 3 | 33% | 0.96 | 0.993 |
| Respiratory Impairment | 3 | 100% | 17.02 | 0.256 |
| Deaf-Blindness | 1 | 0% | 1.17 | 1.000 |
| Deafness-Communicative Visual | 1 | 100% | 15.02 | 0.993 |
| Hearing Loss-Communicative Visual | 1 | 100% | 20.98 | 0.992 |
| Other Visual Impairment | 1 | 100% | 17.88 | 0.993 |



Graph 4.10 Disability Impairment and Successful Outcomes

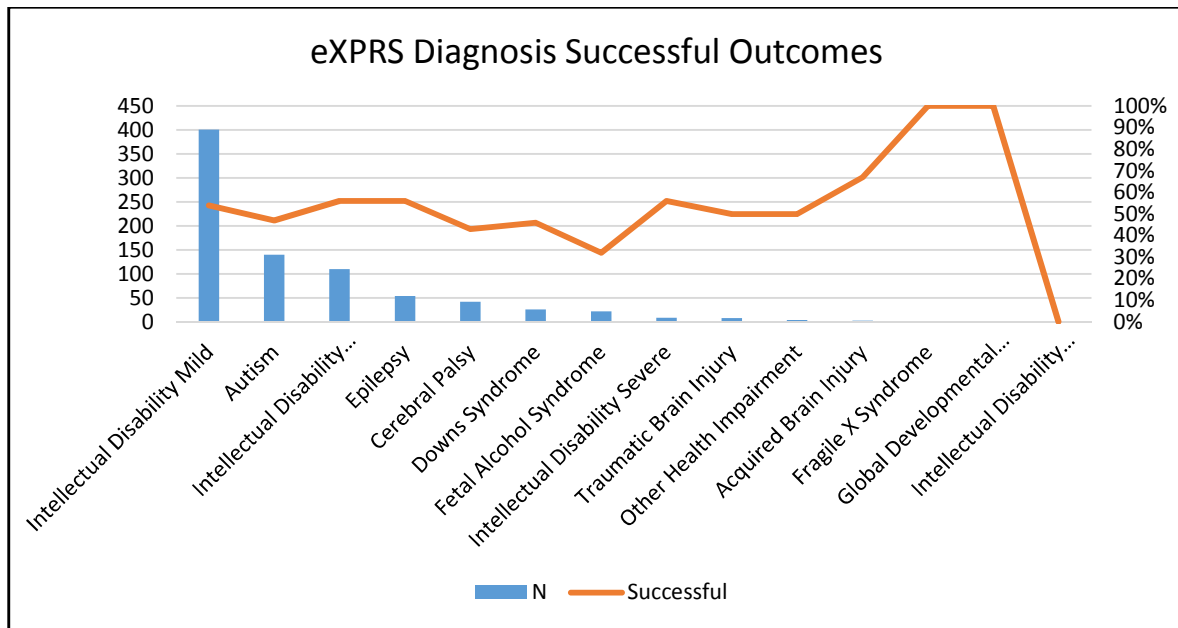
Demographic Data Diagnosis: Not Influential

Testing for significance for the Diagnosis Category was accomplished through regression analysis and evaluation. Similar to the Disability Impairment Category this group identifies 14 additional variables that relate to an individual's disability diagnosis. Within this category, the majority of individuals were identified as "Intellectual Disability Mild" (N=401, 54% successful) followed by "Autism Spectrum Disorder" (N=140, 47% successful).

Overall this category was not found to be a statistically significant indicator of successful or unsuccessful outcomes ($p=0.28$). Additionally, no single diagnosis within the category reached a level of statistical significance. Individuals identified with Fetal Alcohol Syndrome (N=54, 32% successful) and Cerebral Palsy (N=42, 43% successful) tended to be less likely to be successful however, neither reached an overall level of significance.

Table 4.13 Diagnosis Successful Outcomes

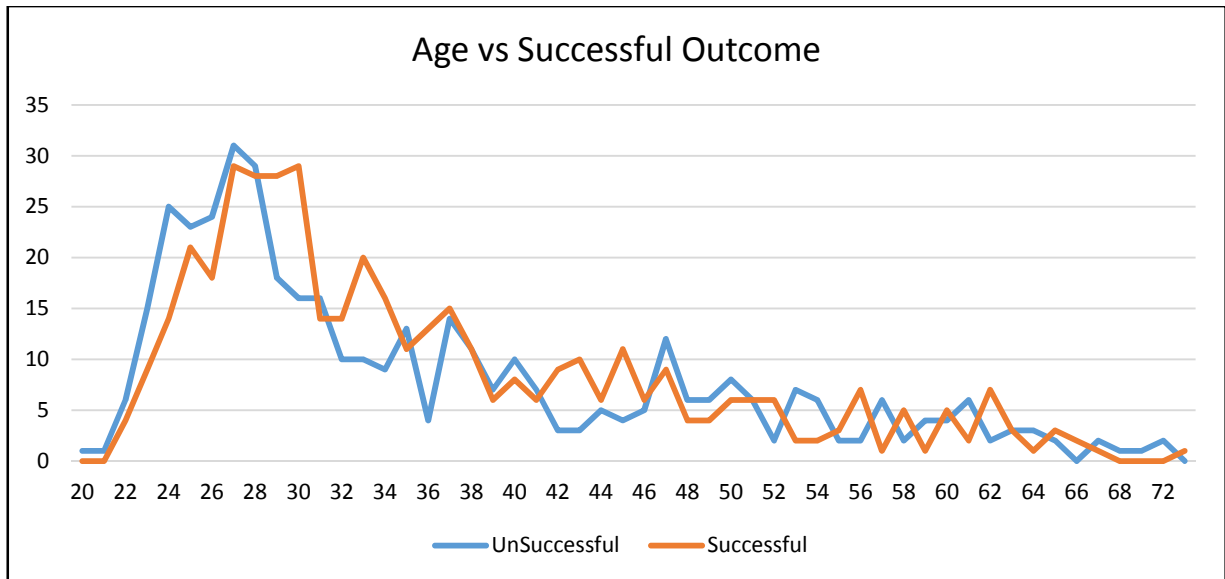
| Service | N | Successful | B | Sig |
|----------------------------------|-----|------------|---------|-------|
| Intellectual Disability Mild | 401 | 54% | -0.175 | 0.806 |
| Autism | 140 | 47% | 0.114 | 0.875 |
| Intellectual Disability Moderate | 110 | 56% | -0.256 | 0.727 |
| Epilepsy | 54 | 56% | -0.223 | 0.769 |
| Cerebral Palsy | 42 | 43% | 0.288 | 0.710 |
| Downs Syndrome | 26 | 46% | 0.154 | 0.849 |
| Fetal Alcohol Syndrome | 22 | 32% | 0.762 | 0.366 |
| Intellectual Disability Severe | 9 | 56% | -0.223 | 0.819 |
| Traumatic Brain Injury | 8 | 50% | 14.909 | 0.996 |
| Other Health Impairment | 4 | 50% | 0.000 | 1.000 |
| Acquired Brain Injury | 3 | 67% | -0.693 | 0.624 |
| Fragile X Syndrome | 1 | 100% | -19.204 | 0.997 |
| Global Developmental Disability | 1 | 100% | -19.204 | 0.389 |
| Intellectual Disability Profound | 1 | 0% | 19.204 | 0.233 |



Graph 4.11 Diagnosis Successful Outcomes

Demographic Data Individual Age: Not Influential

No overall statistical significance was identified relating to a participants age ($p=0.57$). However, a slight benefit was identified for individuals between the ages of 28 and 46 $\chi^2(1, N=233, 15.858, p=0.01, 59\%$ Successful).



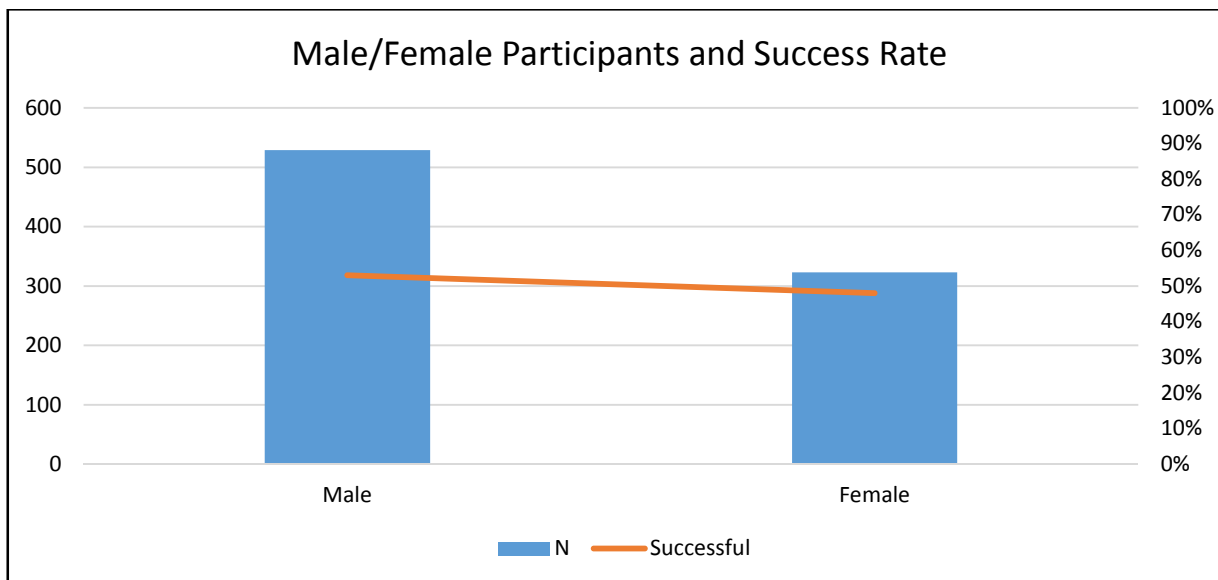
Graph 4.12 Participants Ages vs Employment Outcome

Demographic Data Gender: Not Influential

There were 529 males and 323 female individuals included in this study. With 53% of males being successful and 48% of females being successful, there was no significant difference between them ($p=0.17$).

Table 4.14 Gender Distribution

| Gender | N | Successful |
|--------|-----|------------|
| Male | 529 | 53% |
| Female | 323 | 48% |



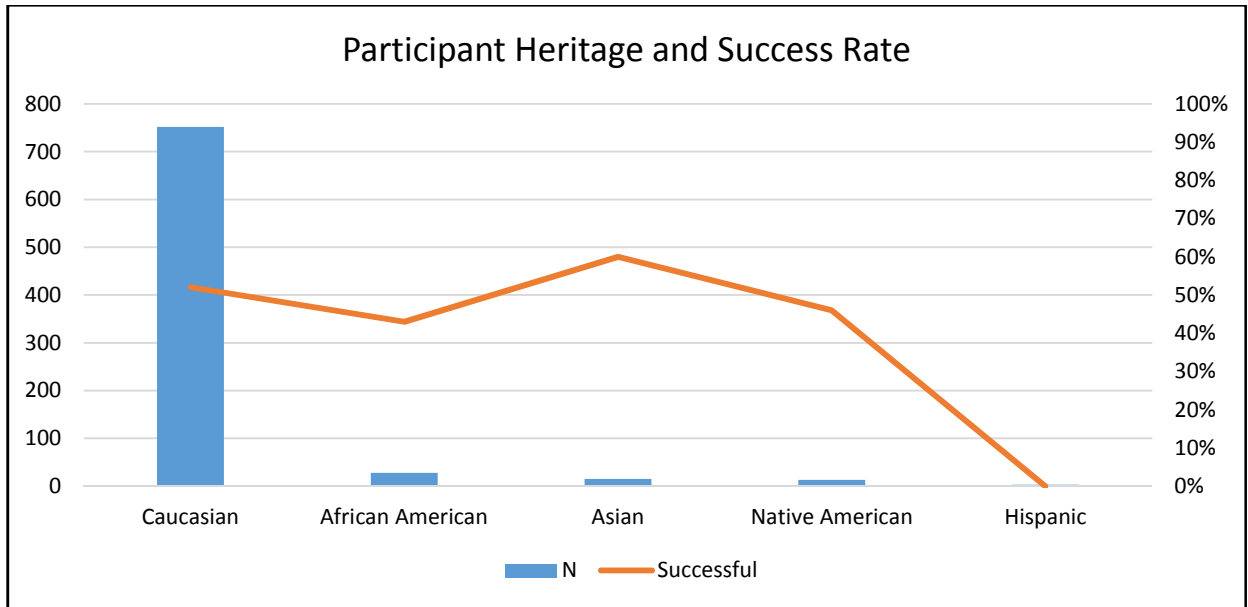
Graph 4.13 Gender Success Rate

Demographic Data Heritage: Not Influential

Heritage was not found to be an indicator of successful or unsuccessful outcome likelihoods ($p=0.72$).

Table 4.15 Success Rate by Participant Heritage

| Heritage | N | Successful |
|------------------|-----|------------|
| Caucasian | 752 | 52% |
| African American | 28 | 43% |
| Asian | 15 | 60% |
| Native American | 13 | 46% |
| Hispanic | 3 | 0% |



Graph 4.14 Participant Heritage and Success Rate

Demographic Data Primary Language: Not Influential

Both an individual’s primary speaking and reading language were tracked as variables however, neither proved statistically significant as an outcome indicator ($p=0.539$).

Table 4.16 Primary Language Spoken

| Primary Language Spoken | N | Successful |
|-------------------------|-----|------------|
| English | 848 | 51% |
| Spanish | 3 | 67% |
| Sign Language | 1 | 100% |

Table 4.17 Primary Language Read

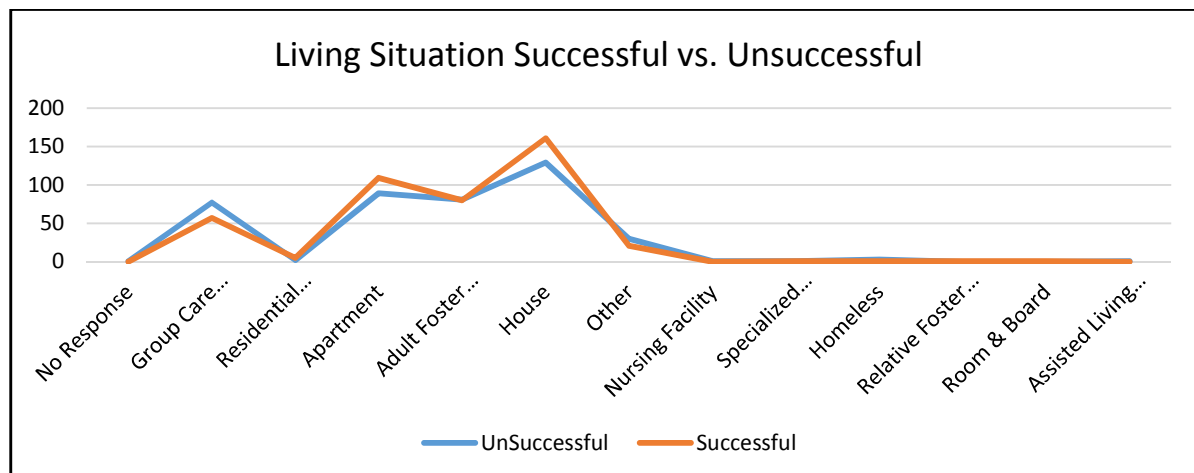
| Primary Language Read | N | Successful |
|-----------------------|-----|------------|
| English | 848 | 51% |
| Spanish | 3 | 67% |
| Dutch | 1 | 100% |

Demographic Data Living Situation: Not Influential

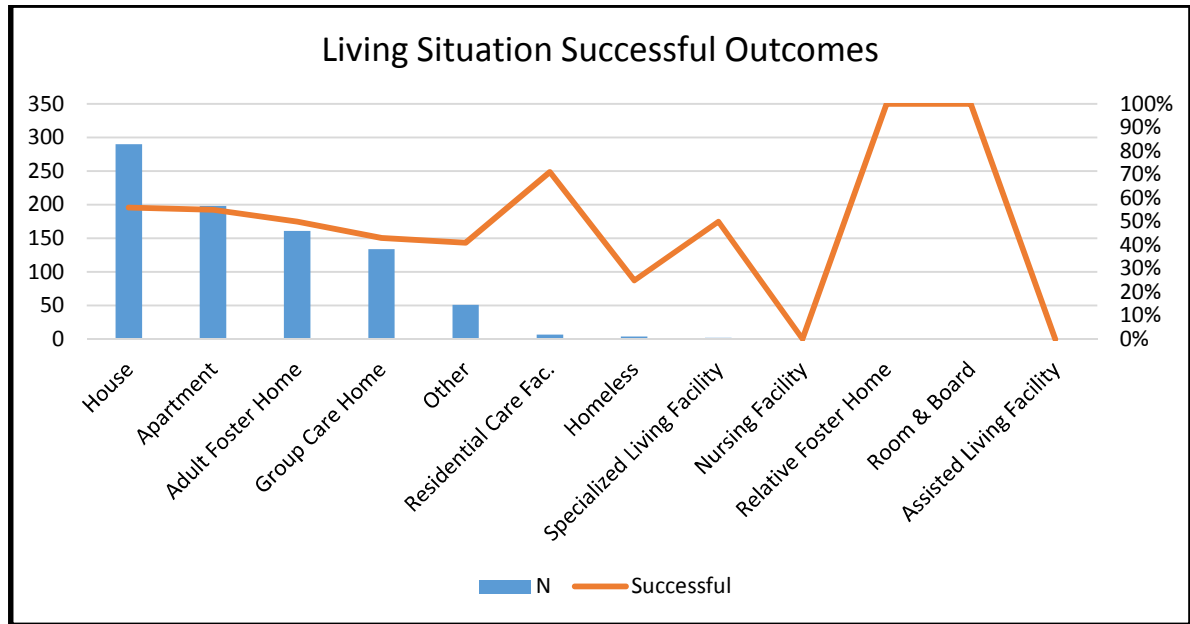
There was no statistical significance found between where a person lived and successful outcomes ($p=0.155$).

Table 4.18 Living Situation

| Living Situation | N | Sig. | Successful |
|-----------------------------|-----|-------|------------|
| House | 290 | 0.990 | 56% |
| Apartment | 198 | 0.988 | 55% |
| Adult Foster Home | 161 | 0.990 | 50% |
| Group Care Home | 134 | 0.999 | 43% |
| Other | 51 | 0.990 | 41% |
| Residential Care Fac. | 7 | 0.990 | 71% |
| Homeless | 4 | 0.990 | 25% |
| Specialized Living Facility | 2 | 0.989 | 50% |
| Nursing Facility | 1 | 0.999 | 0% |
| Relative Foster Home | 1 | 0.986 | 100% |
| Assisted Living Facility | 1 | 0.999 | 0% |



Graph 4.15 Living Situation Successful vs Unsuccessful Outcomes



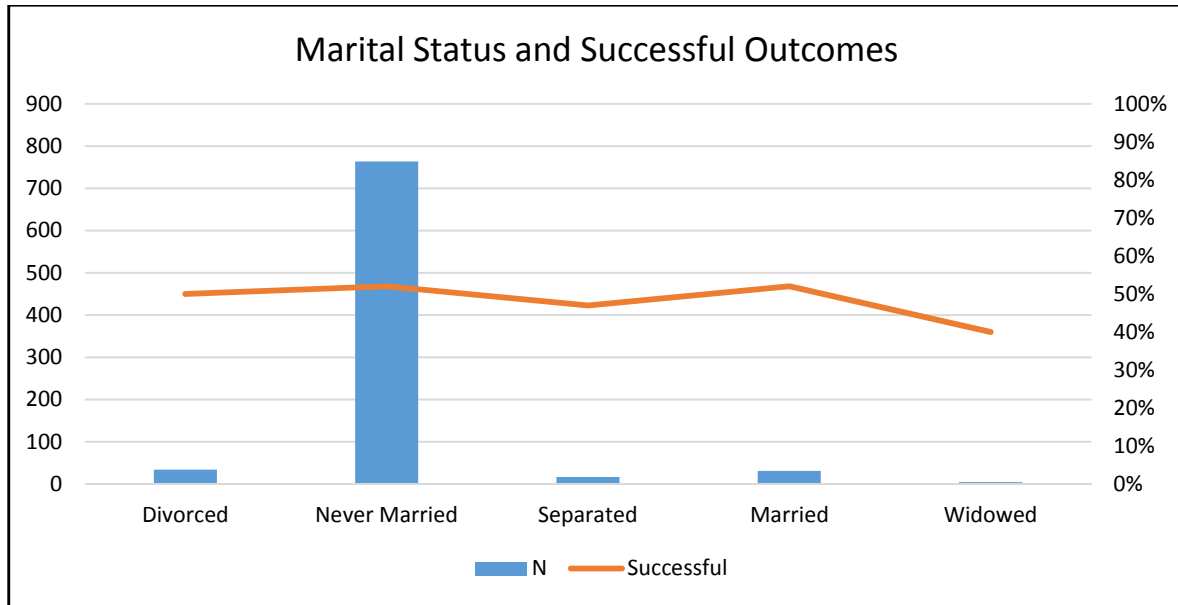
Graph 4.16 Living Situation Successful Outcomes

Demographic Data Marital Status: Not Influential

An individual's marital status was not found to be a statistically significant indicator of successful outcomes ($p=0.92$).

Table 4.19 Marital Status

| Marital Status | N | Successful |
|----------------|-----|------------|
| Never Married | 764 | 52% |
| Divorced | 34 | 50% |
| Married | 31 | 52% |
| Separated | 17 | 47% |
| Widowed | 5 | 40% |



Graph 4.17 Marital Status and Successful Outcomes

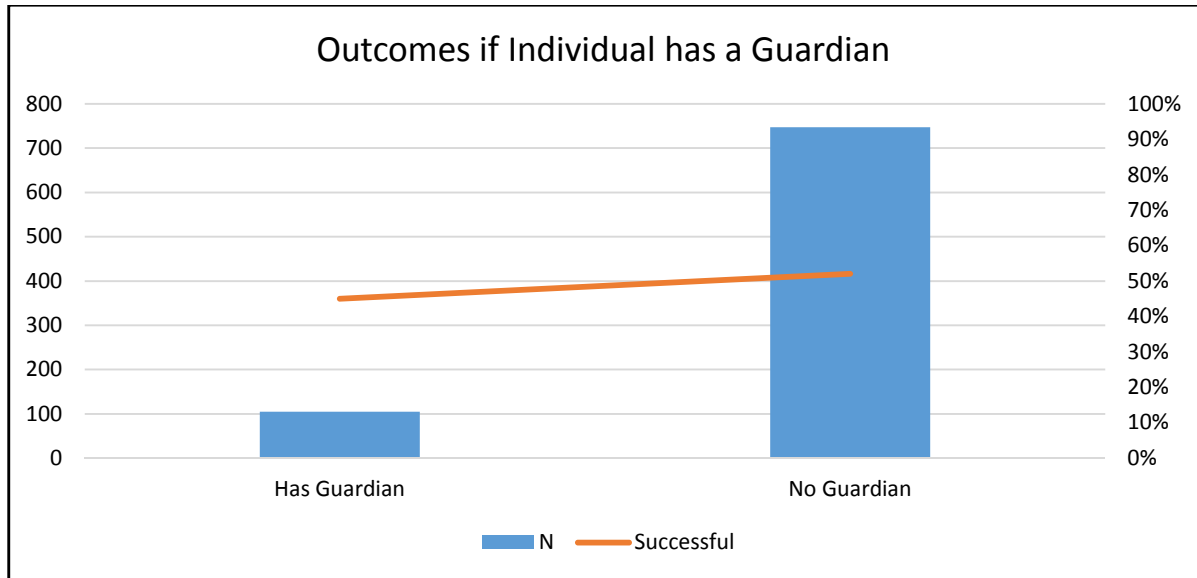
Demographic Data Guardianship: Not Influential

Whether an individual has an appointed guardian was not an overall indicator of successful or unsuccessful outcomes ($p=0.15$). However, for those individuals that did not have a guardian, the odds ratio evaluation identified a slightly higher than average chance for success.

Individuals without a guardian were identified as having a 1.3% greater likelihood of a successful outcome over those individuals with a guardian.

Table 4.20 Guardianship

| Guardianship | N | Successful |
|--------------|-----|------------|
| Has Guardian | 105 | 45% |
| No Guardian | 747 | 52% |



Graph 4.18 Guardianship and Successful Outcomes

Chapter 5: Discussion

This study was developed to begin to fill a void in existing literature by evaluating the impact that training, education and service programs have on former sheltered workshop participants as they transition into a community work setting. The studies hypothesis was that services that directly exposed the person to real work environments, within a local, community setting, was most likely to produce a successful outcome as compared to services that took place in a simulated work environment.

Previous studies conducted by both the George Washington University in Washington D.C. and the Center for Outcome Analysis in Pennsylvania have shown that when states eliminate sheltered employment, the number of people with intellectual and developmental disabilities that are reported as working drops (Stevens, 2017). In Oklahoma, when access to sheltered workshops was eliminated, a large number of the former participants simply stopped working entirely, while those that found work in the community spent about half as much time on the job as they did before (Conroy, 2017).

In Massachusetts, when sheltered workshops were closed, data from the Department of Developmental Services showed that most of those previously participating in sheltered work simply transferred to community-based day programs rather than try and transition into integrated employment (Kassal, 2016). According to Massachusetts state records, within a year of eliminating new entry into the workshops, participants in sheltered work dropped by 61 percent while participation in community-based day programs increased by 27 percent and the number of developmentally disabled people in integrated employment settings increased from by only approximately 6 percent (Van Gelder, Nichols & Tummino, 2015).

Despite the apparent negative trends reported by these and other studies, a 2017 report by the Boston University's Center for Rehabilitation surrounding employment for individuals leaving sheltered workshops noted, "No experimental or quasi-experimental studies of employment services or interventions for individuals with intellectual or developmental disabilities were located in the literature. All previously identified studies were preliminary (by preliminary, we mean studied with research methods that cannot be considered robust or conclusive)" (Gidugu et al, 2017).

While the research conducted for this paper produced a significant amount of data supporting the hypothesis that community work experiences lead to outcomes superior to sheltered work experiences, it also led to questions about some long held intrinsic beliefs within the disability employment community. Foremost amongst these is the benefits derived from the use of programs such as Discovery.

According to the National Center on Leadership for the Employment and Economic Advancement of People with Disabilities, "Discovery is the critical first step in the Customized Employment process; it guides job seekers through a process of finding out who they are, what they want to do, and what they have to offer" (LEAD, 2015). However, evidence collected during this study found that Discovery was often being used as a form of vocational assessment to determine if a person had the prerequisite soft skills to seek employment, rather than the intended purpose of exploration.

While only about 50% of the recipients of Discovery Services were successful at finding community employment (93 out of 175), the expectation was that this should be considerably higher. Moreover, individuals participating in Discovery often had to wait a considerable period of time (up to six months in some regions) for a provider to become

available in order to receive the service, thus took longer to enter the program, and were potentially then more likely to lose interest in employment and seek out other services instead. Based on the preliminary results of this study, the State of Oregon has begun revamping this program in an attempt to improve how the program is being implemented.

This study has shown strong support in favor of the theoretical construct of normalcy. Specifically, when people with disabilities are provided with opportunities for exposure to inclusive, competitive work environments, they are more likely to choose this path once exposed to it. In 1972, Wolf Wolfsburg first called for a new service delivery paradigm that moved people with disabilities away from segregated programs and into the mainstream of society. This principle of normalization has since become imbedded in federal law and community services (Wehman, Inge & Parent, 1995). Since that time, research consistently demonstrates that individuals with disabilities want to be more integrated in the community by having competitive employment like their peers who are non-disabled even if families and staff are hesitant about the transition (Migliore et al. 2007; Rogan & Rinne, 2011).

Unsurprisingly, the results identified that the most important service for successful employment in a community integrated setting was that the person have access to a long-term job coach. This study found that almost 84% of those individuals that had received ongoing job coaching were successful in their community job. The New York State Vocational Rehabilitation Manual supports this finding; “by placing an individual directly in a job with the hands-on assistance of a job coach, areas of vocational and personal strength and weakness become apparent early in the process and are based on actual, not projected or simulated experience” (NYCFS, 2016).

Almost as important as having a job coach available as needed, was that the person also be receiving some form of transportation supports. While several types of transportation support were available to participants in this research study, 69% of those successfully working in community jobs received some form of transportation support. This is a point that self-advocates in the disability community frequently identify as one of the most important keys to their independence; that is an ability to access safe and reliable transportation within their community in a regular, routine and affordable manner. This issue is so important that the American Association for People with Disabilities have identified the need for accessible community transportation as one of their primary advocacy concerns. Transportation and mobility play key roles in the struggle for civil rights and equal opportunity in the disability community. Affordable and reliable transportation allows people with disabilities access to important opportunities in education, employment, health care, housing, and community life (AAPD, 2017).

While having a job coach and a way to get to the job site was the most significant finding overall, having participated in an Employment Path Community Service was clearly the most significant aid to a person's eventual successful integrated employment outcome. Four hundred and seventy five individuals identified in this study had participated in Employment Path Community Services. This finding further supports the hypothesis that an individual's exposure to community employment settings prior to obtaining a job are more likely to result in successful employment outcomes.

The success of Employment Path Community Services serves as a strong example of how participating in community centered employment programs enables the individual to experience first-hand what employment looks like in the real world, and presents the

individual with the opportunity to develop the skills necessary to be successful in integrated employment. This is a bedrock of the Employment First philosophy which states; “Individuals with severe disabilities have the right to be employed by community businesses where they can earn comparable wages, work side-by-side with co-workers with or without disabilities, and experience all of the same benefits as other employees of the company” (PACER, 2017).

In preparation for community employment, if a person receives facility-based services on a routine basis, this research found that having the individual participate in DSA Facility Skills Training results in the participant being approximately 1.5 times more likely to be successful in a community inclusive job. Equally, if a person is receiving community-based services on a routine basis, participating in Community Skills Training also resulted in just about the same 1.5 times increase in successful employment outcomes. Overall, 60% of individuals receiving these services closed successfully with a community-integrated job through vocational rehabilitation. As there is no standard for what skills training consists of, additional research in this area may be needed to determine exactly what training is most relevant to a person’s successful transition.

Interestingly, individuals that had previously participated in Small Group Supported Employment Services were not as likely to be successful as individuals that were participating in Employment Path Community Services were. As these two programs are very similar in nature, the expectation was that the data would show similar outcome performance. However, what was found was that participants were staying longer in small

group settings and were about 10% less likely to move into competitive jobs at the same rate as those participating in Employment Path Community.

While Employment Path Community and Small Group Supported Employment are alike in their service requirements and outcomes, Employment Path Community is a one-on-one service while Small Group Supported Employment is conducted with up to seven other individuals simultaneously. This group like setting may be more familiar and comforting to individuals leaving a sheltered facility setting and could allow participants the opportunity to work and socialize with their friends and peers. This similarity to a sheltered setting could then potentially be causing participants to choose to remain in this service rather than transitioning into a competitive employment position. This socialization and friendship aspect is frequently cited as one of the principle reasons against closing sheltered workshops. Workshops provide “opportunities for structure, socialization and opportunities to foster friendships with peers” (Jacobs, 2014).

Potentially Positive Indicators Identified

Several services provided by the Oregon Office of Developmental Disability Services (ODDS) were found to lead to individuals achieving greater than 50% success rates however; they did not meet testing for statistical significance parameters. This may be due to other factors including things such as low sample size, cross loading with other variables or being closely related to a similar service or diagnosis. Additional study is required to determine why these services appear to be potentially beneficial but, do not meet statistical significance overall.

Small Group Supported Employment served 240 participants and reflected a 53% successful outcome overall ($p=0.46$). While other services with potentially beneficial

factors include; Behavior Consultant Assessment and Training (N=12, 67% Successful, $p=0.28$), Attendant Care - Activities for Daily Living (N=8, 74% Successful, $p=0.18$) and Behavior Support Services (N=7, 71% Successful, $p=0.28$).

Potentially Negative Indicators Identified

Four services appear to be directly correlated to a participant's unsuccessful closure with vocational rehabilitation. DSA Facility Attendant Care, Attendant Care IADL, Transportation DD Provider to/from Work and Individual Skills Training. Each of these could be potentially explained based upon the nature of the service.

DSA Facility Attendant Care is a service that occurs in a facility-based setting where support workers assist the individual with a wide variety of personal tasks. Most individuals receiving this service were found to require substantial levels of personal assistance with activities in support of daily living to include toileting, hygiene and self-sufficiency. It would be expected that should the individuals choose to seek employment outside of the facility setting, these types of services would most likely need to be carried over to the employment setting. Out of the 177 individuals receiving this service and applying for services at VR, almost 160 (90%) were unable to successfully obtain a competitive employment position. Additional study is needed to determine if this outcome is related to the severity of the individual's disabilities or an unwillingness by employers to accommodate this level of high support needs.

Attendant Care Instrumental Activities of Daily Living (IADL) IADL is defined in the Oregon Code as "those activities, other than activities of daily living, required by an individual to continue independent living" (OAR 411-015-0007). Additionally, individuals receiving this service are expected to receive cognitive assistance or emotional support to help the individual cope with change and to assist the person with decision-making,

reassurance, orientation, memory, or other cognitive functions. As such, most participants receiving this service are generally acknowledged to require significant personal support needs and much like those supported by DSA Facility Attendant Care; additional study is needed to determine if this outcome is related to the severity of the individual's disabilities or an unwillingness by employers to accommodate this level of high support needs. Overall, only 22 individuals previously receiving this service attempted to participate in VR services and of those 55% were unable to transition into integrated employment.

While access to transportation was found to be one of the bedrocks of successful employment outcomes, this study found that Transportation Developmental Disabilities Provider to/from Work services tended to result in a majority of recipients being unsuccessful to transition to community employment. Transportation to/from work is a service where the provider is physically transporting the individual to and from their place of employment. One of the reasons for the apparent negative outcomes of this service may be that this service is likely occurring in situations that are less than fully integrated (i.e. small group, discovery or a path service) or in situations where the participant has a relatively high-level of support needed at the work site due to significant support needs. Of the 20 individuals that had previously utilized this service, 13 (65%) were unable to close successfully at VR.

Lastly Individual Skills Training is a service designed to assist the individual with learning to acquire, maintain or enhance independence within a community integrated setting with a strong focus on socialization needs. This would tend to indicate that the participant has a need to improve socialization skills in community environments, which is a skill necessary to successful employment in a community setting. While collectively, only

four individuals participated in this service and later attempted to seek community employment, three of the four were unable to make the transition successfully.

Support Services Neither Positive nor Negative Identified

Two services were found to be neither beneficial nor detrimental to an individual's eventual outcome: Discovery and DSA Community Services.

As discussed previously, the reason Discovery may have produced the lack of an expected impact may be due to the nature of how this program was being used. Rather than being used as an opportunity for career exploration, research identified that the service was most likely serving as a form of vocation assessment to determine if a person was ready for community employment.

While changes in the program have recently clarified the purpose of this program, during the period this data encompasses, the 175 participants having received this service obtained an overall 53% success rate ($p=0.70$). This is comparable to other vocational assessment outcomes and appears to support the belief that this service was being misused as an evaluative rather than exploratory program.

Individuals that had received DSA Community Support Services were also found to neither be statistically more successful or unsuccessful than chance. This came as somewhat of a surprise. DSA Community Support is an inclusive service that requires participants to be engaged in public activities in a community based setting more than 50% of their time. It is postulated that perhaps since this is not exclusively an employment related service; participants utilizing this program may be engaged more in socialization activities than those seeking out more exclusively work-related programs and services. Overall, out of the 145 former recipients of this program, 76 did not close successful in a VR program.

Study Definition of an Ideal Candidate

While, it is important to always understand that every person and their individual situation is unique, after completing this study it is interesting as an academic exercise to see what an ideal candidate for success would look like from the perspective of this research.

Based on this studies result, the ideal candidate would be between the ages of 28 and 46, be a high school graduate and preferably not hold a special education completion diploma. They would live in Central Oregon, ideally in Hood River, Umatilla or Deschutes County. However, they would not live in Linn County or in the city of Corvallis.

This candidate would be categorized by the Oregon Developmental Disabilities System (ODDS) as a SIS Tier 1 and by Vocational Rehabilitation as Track 1. Although, it was noted that the SIS Tier Level was surprisingly not as important as not being identified in VR's Track 3.

The person would probably be Caucasian and male however, neither race nor gender is terribly important overall. They would most likely live in a single-family home or apartment and would preferably not be living in a group or residential support home. They would be almost guaranteed to be a US Citizen and both speak and read English as their primary language.

This ideal candidate would probably not have ever been married although, individuals never married and married both did tend to succeed almost equally well. However, they would preferably not be either widowed or separated. They will most likely not have a guardian though, both individuals with and without guardians have relatively similar outcomes. It was found that those individuals that did not identify with having a guardian were just slightly more successful overall.

They will almost certainly have been diagnosed with having a cognitive impairment and or a mild intellectual disability and would probably have been referred to VR through an Intellectual and Developmental Disabilities service provider. Interestingly individuals that had been referred to vocational rehabilitation by a mental health provider had an overall slightly higher likelihood of success as compared to all other referral sources.

This person would probably be using the Developmental Disabilities In-Home Home and Community Based Care Waiver, ideally have previously participated in an Employment Path Community Supports Service and be authorized Commercial Transportation Community Supports. Furthermore, they will almost certainly be participating in On-Going Job Coaching having already completed the six months of Initial Job Coaching offered by ODDS.

They may have participated in a Small Group Supported Employment Support program and if they have used Day Support Activities Facility Based Services, they will have had DSA Facility Based Skills Training to accompany that. If they had previously utilized DSA Community Based Service, then they would have equally probably participated in the DSA Community Skills Based Training as well.

Limitations of This Work

While this study has produced a tremendous amount of information that has been unavailable until now, it is recognized that data primarily focused on individuals with Intellectual and Developmental Disabilities within the State of Oregon. While this population was representative of the typical age, education and disability level of workers in a sheltered workshop setting across the United States, the majority of these participants were Caucasian and had been raised in the Pacific Northwest.

Additionally, research focused specifically on those individuals that had received employment services in a sheltered workshop environment and had then attempted to gain community employment through services offered by the state vocational rehabilitation agency. No attempt was made to evaluate individuals that left a sheltered workshop setting and sought employment either on their own or by natural supports. Data was also not available for individuals that gained employment directly through their participation in employment support programs such as Small Group, Employment Path or Discovery.

Recommendations for Further Study

Though it is believed that the findings identified by this study would be similar to populations with other disabilities as well, it would be beneficial to conduct research to validate this hypothesis and see if the services identified as positive or likely to produce an employment outcome met with the same results within those populations as well.

It would be beneficial to work with those individuals still in Oregon's sheltered workshops and encourage their participation in services and programs identified by this study as being beneficial to achieving community employment outcomes. This would allow observation to determine if the success rate increased as expected and would result in a streamlining of existing state systems and better utilization of the limited funds available if proven accurate.

Another possible area to consider for future study would be to expand this survey's methodology to individuals with disabilities that have identified an employment outcome goal and are currently participating in high school transition programs. As many of the characteristics between these two populations are similar, it would be a logical step to apply this work to that population and look for commonalities in successful outcomes.

As this study was localized to one specific state and to the services and providers operating in that region, it would be beneficial to conduct a similar study in other areas of the country and across a wider population demographic. Performing a similar study across multiple states simultaneously to look for commonalities and trends could also aid in eliminating any potential bias injected due to disparities between state programs (i.e. school systems, case workers, state funded disability programs, etc.). This information would then be useful to aid in the redesign of employment services across the country and potentially substantially increase the outcomes for countless people in the future.

Conclusion

While this study was unique in its one-of-a-kind access to the breadth and depth of demographic and service information available on such a well-defined population, the services these participants received and the experiences they have encountered are universal.

The most important take-away from this study is the clear importance of real world work experience in real employment settings. This could potentially take the form of internships, work experiences, work evaluations, group work or even trial work assessments, but there is no substitute for exposure to genuine workplace environments. While learning labs, simulated office or industrial settings and vocational training serves a valid and important role in preparing a person for employment, these artificial environments cannot fully replicate the experience a person gains through hands on exposure and experience.

This study found that in most instances if a person genuinely wants to work, they are able to achieve that goal. There was no significance found in the level of a person's disability, the educational tier achieved, the age or gender of the individual or if a person was in a rural or urban setting.

While there was no “one best” service identified as the panacea for helping a person leaving a sheltered workshop gain employment, it was found that depending on the individuals past services and experiences that some combinations of support services were noticeably and significantly more likely to result in positive employment outcomes. It is believed that this information could now be used to help tailor individual plans, based on a person’s choices and desires, that will produce a higher probably of success than would otherwise be achieved.

Now that this initial work has been performed and potentially beneficial services identified, it is this authors hope that the information be used and evaluated in other settings, with other populations and in other locations to verify the credibility of this study’s findings.

References

- Applied Behavior Analysis for Children With Autism. (2009). Retrieved from <http://autism.healingthresholds.com/therapy/applied-behavior-analysis-aba>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.).
- Autism Speaks. (2013). *Autism at 70 – from Kanner to DSM 5*. New England Journal of Medicine. Retrieved from: <https://www.autismspeaks.org/science/science-news/autism-70-%E2%80%93-kanner-dsm-5>.
- Badcock, C., (2010). *Bruno Bettelheim, psychotic savant*. In *Evolutionary Psychology: A Critical Introduction; Psychology Today*. Retrieved from: <https://www.psychologytoday.com/blog/the-imprinted-brain/201004/bruno-bettelheim-psychotic-savant>.
- Baron, R., Draine, J., & Salzer, M. (2013). I'm not sure that I can figure out how to do that: Pursuit of work among people with mental illnesses leaving jail. *American Journal of Psychiatric Rehabilitation*, 16(2), 1–13. <http://doi.org/10.1080/15487768.2013.789696>.
- Bender, L., Goldschmidt, L., & Siva, D.V. (1962). *LSD-25 helps schizophrenic children*. *American Druggist*, 146(13), 33. Retrieved from http://www.erowid.org/references/refs_view.php?A=ShowDoc1&ID=2220.
- Blanck, P. (1999). EMPIRICAL STUDY OF DISABILITY, EMPLOYMENT POLICY, AND THE ADA. *Mental and Physical Disability Law Reporter*, (April).
- Blustein, D. L. (2008). The role of work in psychological health and well-being: A conceptual, historical, and public policy perspective. *American Psychologist*, 63(4), 228–240. <http://doi.org/10.1037/0003-066X.63.4.228>.
- Boseley, S., (2010). *"Lancet retracts 'utterly false' MMR paper"*. The Guardian. London.
- Bowker, A. (1994). Handle with care: Dealing with offenders who are mentally retarded. *FBI Law Enforcement Bulletin*, July, 12–16.
- Braddock, D., Hemp, R., Rizzolo, M., Tanis, E. S., & Wu, J. (2011). *The state of the states in developmental disabilities*. Denver, Colorado.
- Brennan-Krohn, Z. (2015). Employment for People with Disabilities : A Role for Anti-Subordination. *Harvard Civil Rights-Civil Liberties Law Review*, 51, 241–272.
- Broyd, N., (2011). *"BMJ Declares Vaccine-Autism Study 'an Elaborate Fraud', 1998 Lancet Study Not Bad Science but Deliberate Fraud, Claims Journal"*. WebMD Health News.

- Bruffaerts, R., Sabbe, M., & Demyttenaere, K. (2004). Attenders of a university hospital psychiatric emergency service in Belgium. *Social Psychiatry and Psychiatric Epidemiology*, 39(2), 146–153.
- Bruyere, S., von Shrader, S., Coduti, W., & Bjellend, M. (2010). United States Employment Disability Discrimination Charges: Implications for Disability Management Practice. *International Journal of Disability Management*, 5(2), 48–58.
- Butterworth, J., Marrone, J., & Hall, A. C. (2014). *Alaska Mental Health Trust Authority Beneficiary Employment Policy Review Alaska Mental Health Trust Authority Beneficiary Employment Policy Review*.
- Butterworth, J., Smith, F. A., Hall, A. C., Migliore, A., Winsor, J., Domin, D., & Timmons, J. C. (2012). *State data: The national report on employment services and outcomes*. Boston, Ma.
- Callahan, M. (2014). *Transition to Integrated Employment: A 2014 Series of Trainings and Public Forums*. Rhode Island.
- Campbell, F. A. K., 2008. *Refusing able(ness): a preliminary conversation about ableism*. M/C Journal of Media and Culture, Jul 2008, 11 (3). Queensland University of Technology, Australia.
- Cimera, R. E., & Burgess, S. (2011). Do adults with autism benefit monetarily from working in their communities? *Journal of Vocational Rehabilitation*, 34(3), 173–180. <http://doi.org/10.3233/JVR-2011-0545>.
- Clear, M., 1999. *The "normal" and the monstrous in disability research*. Disability & Society, 14 (4), pp.435–448.
- Comino, E., Harris, E., Chey, T., & Harris, M. (2003). Relationship Between Mental Health Disorders and Unemployment Status in Australian Adults. *Australian and New Zealand Journal of Psychiatry*, 37(2), 230–235.
- Davis, L. (2006). *The Arc's justice advocacy guide: An advocate's guide on addicting victims and suspects/ defendants with intellectual disabilities*. Silver Spring, Maryland: The Arc of the United States.
- Deer B., (2004). *"Revealed: MMR research scandal"*. The Sunday Times. London.
- Dispenza, M. (2002). Overcoming a Digital Divide, Technology Accommodations and the Undue Hardship Defense under the Americans with Disabilities Act. *Syracuse Law Review*, 52, 159–181.

- Drake, R. E., Becker, R., Goldman, H., & Martinez, R. (2006). Best Practices: The Johnson & Johnson--Dartmouth Community Mental Health Program: Disseminating Evidence-Based Practice. *Psychiatric Services*, *57*(3), 302–304.
- Durbin, B., & Mandas, K. (2011). *The causes of autism: a historical perspective*. History of Psychology Projects. Retrieved from: <http://bdkmsw.umwblogs.org/what-is-autism/aba-therapy>.
- Equal Employment and Opportunities Commission. (1999). *Enforcement Guidance: Reasonable Accommodation and Undue Hardship Under the Americans with Disabilities Act*. Washington, DC.
- Flores, N., Jenaro, C., Begona Orgaz, M., & Victoria Martín, M. (2011). Understanding Quality of Working Life of Workers with Intellectual Disabilities. *Journal of Applied Research in Intellectual Disabilities*, *24*(2), 133–141. <http://doi.org/10.1111/j.1468-3148.2010.00576.x>
- Goldman, H., & Azrin, S. T. (2003). Public policy and evidence-based practices. In R. E. Drake (Ed.), *The psychiatric clinics of North America: Evidence-based practices in mental health care*. Philadelphia: Saunders Company.
- Hall, A. C., Winsor, J., & Butterworth, J. (2014). Data systems and decision-making: State intellectual/developmental disability agencies and their employment data collection systems. *Journal of Vocational Rehabilitation*, *41*(3), 179–191. <http://doi.org/10.3233/JVR-140712>.
- Hanes, P., & Ridgely, M. (1998). *Review of Alaska-specific Work Disincentives for Individuals with Significant Disabilities Governor 's Council on Disabilities and Special Education*. Portland, Oregon.
- Haslett, W.R., Drake, R.E., Bond, G.R., Becker, D.R. & McHugo, G. . (2011). Individual placement and support: does rurality matter? *American Journal of Psychiatric Rehabilitation*, *14*, 237–244.
- Heidkamp, P. et al., 2010. KISDEdition. *Learning from Nairobi mobility: a cultural library project*.
- Henninger, N., & Taylor, J. (2015). Family Perspectives on a Successful Transition to Adulthood for Individuals with Disabilities. *National Institute of Health Public Access*, *52*(2), 98–111. <http://doi.org/10.1352/1934-9556-52.2.98>.Family.
- Herbert, J.D., Sharp, I.R., & Gaudiano, B.A. (2002). *Separating fact from fiction in the etiology and treatment of autism*. The Scientific Review of Mental Health Practices, *1*(1), 1-35. Retrieved from <http://www.srmph.org/0101/autism.html>.

- Iyer, A., & Masling, S. (2015). *Recruiting, Hiring, Retaining and Promoting People with Disabilities: A Resource Guide for Employers*. Washington, DC.
- Jaehning, L., & Fleurant, D. (2015). *Barriers to Integrated Employment*. Anchorage, Alaska.
- Janssen, P., de Jonge, J., & Nijhuis, F. (2001). Work and Individual Determinants of Intrinsic Work Motivation, Emotional Exhaustion, and Turnover Intention: A Multi-Sample Analysis. *International Journal of Stress Management*, 8(4), 257–283.
- Jasek, Marissa (2011). "Healthwatch: Disputed autism study sparks debate about vaccines". WWAY Newschannel 3.
- Jin, R., Shah, C. P., & Svoboda, T. J. (1995). The Impact of Unemployment on Health. *Canadian Medical Association Journal*, 153(5), 529–540.
- Joost, G., Bieling, T., 2012. *Design against Normality*, V!RUS, n. 7.
- Kregel, J., Wehman, P., & Banks, P. (1989). The effects of consumer characteristics and type of employment model on individual outcomes in supported employment. *Journal of Applied Behavior Analysis*, 22, 407–416.
- Kregel, J., Wehman, P., Revell, G., Hill, J., & Cimera, R. (2000). Supported employment benefit-cost analysis: Preliminary findings. *Journal of Vocational Rehabilitation*, 14(3), 153–157.
- L., P. L., & Marsha, B. P. (2006). Enhancing Job-Site Training of Supported Workers With Autism: A Reemphasis on Simulation. *Journal of Applied Behavior Analysis*, 39(1), 91–102. <http://doi.org/10.1901/jaba.2006.154-04>.
- Lichstein, K.L., & Schreibman, L. (1976). Employing electric shock with autistic children. *Journal of Autism and Childhood Schizophrenia*, 6(2), 163-173. doi:10.1007/BF01538060
- Lidal, I., Huynh, T., & Biering-Sørensen, F. (2007). Return to work following spinal cord injury: a review. *Disability and Rehabilitation*, 29(17), 1341–1375.
- Litt, B. (2014). *General Mental Illness*. The Quarterly, 2, p4. Brain & Behavior Research Foundation.
- Livermore, G. A., & Roche, A. (2011). *Longitudinal Outcomes of an Early Cohort of Ticket to Work Participants* (Vol. 71). Washington, DC.

- Los Angeles Times Staff. (2011). *Autism: rise of a disorder*. Retrieved from: <http://timelines.latimes.com/autism-history/#662688000000>.
- Maag, E. M., & Wittenburg, D. C. (2003). *Real Trends or Measurement Problems? Disability and Employment Trends from the Survey of Income and Program Participation*. Ithaca, New York.
- Mandal, A., (2014). *Autism history: a chronological history of autism*. News-Medical.Net: AZoNetwork. Retrieved from: <http://www.news-medical.net/health/Autism-History.aspx>.
- Mayo Clinic Staff. (2016). *Autism spectrum disorder medications*. Mayo Foundation for Medical Education and Research. Retrieved from: http://www.mayoclinic.org/diseases-conditions/autism-spectrum-disorder/basics/definition/con-20021148?utm_source=Google&utm_medium=abstract&utm_content=Autism&utm_campaign=Knowledge-panel.
- McInnes, M. M., Ozturk, O. D., McDermott, S., & Mann, J. (2010). Does supported employment work? *Journal of Policy Analysis and Management*, 29(3), 506–525. <http://doi.org/10.1002/pam.20507>.
- Migliore, A., Mank, D., Grossia, T., & Rogan, P. (2007). Integrated employment or sheltered workshops: Preferences of adults with intellectual disabilities, their families, and staff. *Journal of Vocational Rehabilitation*, 26(2007), 5–19.
- Moseley, C. R. (2009). Workers First. *Community Services Reporter*, June, 1–3. Retrieved from <http://www.nasddd.org/Publications/newsletters.shtml>.
- National Organization on Disability. (2010). *Disability Program Design and Planning*.
- Neff, W. S. (1985). *Work and Human Behavior*. New York: Aldine.
- Newman, L., Wagner, M., Knokey, a M., Marder, C., Nagle, K., Shaver, D., & Wei, X. (2011). The Post-High School Outcomes of Young Adults with Disabilities up to 8 Years after High School: A Report from the National Longitudinal Transition Study-2 (NLTS2). NCSER 2011-3005. *National Center for Special Education Research*, 2, 218.
- PBS.org. (2013). *Timeline: A cultural history of autism*. American Documentary Inc. Retrieved From: <http://www.pbs.org/pov/neurotypical/timeline-autism-history>.
- Petersilia, R. (2000a). *Doing justice: The criminal justice system and offenders with developmental disabilities*. CPRC Brief. Irvine, California.

- Petersilia, R. (2000b). *Doing justice? Criminal offenders with developmental disabilities. CPRC Brief* (Vol. 12). Irvine, California: California Research Center, University of California, Irvine.
- Poland G., Jacobson RM (2011). "The Age-Old Struggle against the Antivaccinationists". *The New England Journal of Medicine*. 364 (2): 97–9. doi:10.1056/NEJMp1010594.
- Post, M., & Storey, K. (2002). Review of using auditory prompting systems with persons who have moderate to severe disabilities. *Education and Training in Mental Retardation and Developmental Disabilities*, 37, 317–327.
- Prenovitz, S. (2012). *Service Providers' Experiences Under the Revised Ticket to Work Regulations*. Washington, DC.
- Project Autism. (2015). *History of autism: putting the pieces together*. Retrieved from: <http://projectautism.org/history-of-autism>.
- Rain, E., (2015). *Relationship Development Intervention*. Autism: Love to Know. Retrieved from: <http://autism.lovetoknow.com/RDI>.
- Rapp, C. A., Bond, G. R., Becker, D. R., Carpinello, S. E., Nikkel, R. E., & Gintoli, G. (2005). The role of state mental health authorities in promoting improved client outcome through evidence-based practice. *Community Mental Health Journal*, 41, 347–363.
- Revell, G., Kregel, J., Wehman, P., & Bond, G. (2000). Cost effectiveness of supported employment programs: What we need to do to improve outcomes. *Journal of Vocational Rehabilitation*, 14(2000), 173–178.
- Rogan, P., Banks, B., & Howard, M. (2000). Workplace supports in practice: As little as possible, as much as necessary. *Focus on Autism and Other Developmental Disabilities*, 15(1), 2–11.
- Rubin, S., & Rossler, R. (2008). *Foundations of the Vocational Rehabilitation Process* (6th ed.). Austin, Tx: Pro-Ed.
- Rusch, F. R., & Braddock, D. (2004). Adult day programs versus supported employment (1988–2002): Spending and service practices of mental retardation and developmental disabilities state agencies. *Research and Practice for Persons with Severe Disabilities*, 29(4), 237–242. <http://doi.org/10.2511/rpsd.29.4.237>.
- Schur, L., Kruse, D., & Blanck, P. (2005). Corporate culture and the employment of persons with disabilities. *Behavioral Sciences and the Law*, 23(1), 3–20. <http://doi.org/10.1002/bsl.624>.

- Seattle Community Network. (2009). *Drugs and other treatments as they relate to the spectrum*. Retrieved from <http://www.scn.org/autistics/pharmaceuticals.html>.
- Shakespeare T. (2007) Disability, Normality, and Difference. In: Cockburn J., Pawson M.E. (eds) *Psychological Challenges in Obstetrics and Gynecology*. Springer, London.
- Sinha, Y., Silove, N., Wheeler, D., & Williams, K. (2006). Auditory integration training and other sound therapies for autism spectrum disorders: A systematic review. *Archives of Disease in Childhood*, 91(12), 1018-1022. doi:10.1136/adc.2006.094649.
- Sole-Smith, V., (2014). *The history of autism*. Parents. Meredith Corporation; Los Angeles. Retrieved from: <http://www.parents.com/health/autism/history-of-autism>.
- Spreat, S. (2017). *Challenges of Employment First*. Social Innovations Journal, 23 March 2017. Retrieved from: <http://www.socialinnovationsjournal.org/sectors/89-government-policy/2349-challenges-of-employment-first>.
- Stapleton, D., Livermore, G., Thornton, C., O'Day, B., Weathers, R., Harrison, K., ... Wright, D. (2008). *Ticket to Work at the Crossroads: A Solid Foundation with an Uncertain Future*. Washington, DC.
- Strauser, D. (2014). *Career Development, Employment, and Disability in Rehabilitation : From Theory to Practice*. Srinper Publishing Company.
- Strauser, D., O'Sullivan, D., & Wong, A. (2010). The relationship between contextual work behaviours self-efficacy and work personality: an exploratory analysis. *Journal of Vocational Rehabilitation*, 32(24).
- Szymanski, E., Enright, M., Hershenson, D., & Ettinger, J. (2003). Career development theories, constructs and research: Implications for people with disabilities. In E. M. Szymanski & R. M. Parker (Eds.), *Work and disability: Issues and strategies in career development and job placement* (2nd ed., pp. 91–153). Austin, Tx: Pro-Ed.
- Tschopp, M. K., Perkins, D. V., Hart-Katuin, C., Born, D. L., & Holt, S. L. (2007). Employment barriers and strategies for individuals with psychiatric disabilities and criminal histories. *American Journal of Psychiatric Rehabilitation*, 26, 175–187.
- Wachtel, L.E., Conntrucci-Kuhn, S.A., Griffin, M., Thompson, A., Dhossche, D.M., & Reti, I.M. (2009). *ECT for self-injury in an autistic boy*. *European Child and Adolescent Psychiatry*, 18, 458-463. doi: 10.1007/s00787-009-0754-8.
- Wakefield A., Murch S, Anthony A; et al. (1998). "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children". *The Lancet*. 351 (9103): 637–41. doi:10.1016/S0140-6736(97)11096-0.

- Wehman, P. (2002). A New Era: Revitalizing Special Education for Children and Their Families. *Focus on Autism and Other Developmental Disabilities, 17*(4), 1–3.
- Wehman, P., Revell, W., & Brooke, V. (2003). Has It Become the “ First Choice ” Yet ? *Journal of Disability Policy Studies, 14*(3), 163–173.
<http://doi.org/10.1177/10442073030140030601>.
- Wehmeyer, M. L., Agran, M., & Hughes, C. (1998). *Teaching self-determination to students with disabilities: Basic skills for successful transition*. Baltimore, Maryland: Brookes.
- Winsor, J. E., & Butterworth, J. (2008). Participation in integrated employment and community-based nonwork services for individuals supported by state disability agencies. *Intellectual and Developmental Disabilities, 46*, 166–168.
- Yamaki, K., & Fujiura, G. T. (2002). Employment and income status of adults with developmental disabilities living in the community,. *Mental Retardation, 40*, 132–141.

Appendix A Glossary of Terms

| <i>Glossary Term</i> | <i>Glossary Definition</i> |
|---------------------------------|--|
| Abilities | Abilities is one of the primary employment factors. Abilities include the individual's existing physical, mental, or functional capacity to engage successfully in employment through natural aptitude or acquired proficiency |
| Americans with Disabilities Act | ADA prohibits discrimination based on disability in numerous venues, including (but not limited to) employment, public entities/transportation, public accommodations, and telecommunications. |
| Autism Spectrum Disorders | Developmental disabilities significantly affecting verbal and non-verbal communication, and social interaction, generally evident before age three, that adversely affect a child's educational performance. |
| Assessment | Assessments are conducted by Vocational Rehabilitation to explore a person's unique strengths, resources, priorities, concerns, interests, capabilities, and the potential need for supported employment. |
| Benefits Planning | The process of helping individuals with disabilities to understand how employment will impact their eligibility and benefits for Social Security Disability Insurance, Supplemental Security Income, Medicare, Medicaid, HUD Housing assistance, Food Stamps and other programs. A benefits counselor may also be resource for an individual to obtain benefits, and/or to understand and use work incentives available through the Social Security Administration and other public or private programs. |
| Capabilities | Capabilities are one of the primary employment factors. Capabilities include the potential for an individual to develop the skills necessary for |

| | |
|-----------------------------------|--|
| | employment through the provision of vocational rehabilitation services. |
| Career Exploration | Career Exploration is a service to assist a participant in selecting an employment goal amongst several options to produce a specific vocational outcome |
| Case Management | Case Management within the Developmental Disability system includes the functions performed by a services coordinator (SC) or personal agent (PA). Case management includes, but is not limited to, determining service eligibility, developing a plan of authorized services, and monitoring the effectiveness of services and supports. Service Coordinators and Personal Agents perform the functions of case management. |
| Community Experience | Community Experiences are activities occurring outside of the school or workshop setting. Participants apply academic, social, and/or general work behaviors and skills in real world environments. These activities may include volunteer opportunities, to help a person develop general, non-job-task-specific strengths and skills that contribute to employability in competitive integrated employment settings. |
| Community Work Experience | Community/ Work Experience can be through Discovery, including volunteer or Job Shadow opportunities, or Employment Path Services. |
| Competitive Integrated Employment | Competitive integrated employment (CIE) is work performed by a person with an impairment or health-related disability ("health impairment") within an integrated setting. Wages are at least minimum wage or higher and at a rate comparable to non-disabled workers performing the same task. |
| Closure/Rehabilitated | When the supported employment maintains employment for a period of at least 90 days from the start of stabilization. The supported |

| | |
|--|---|
| | <p>employee and VR counselor agree the provision of services under the individual's IPE are consistent with his or her strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice leading to placement in the most integrated setting possible. The supported employee and the employer report the employment outcome is satisfactory and he/she is performing well on the job.</p> |
| Commensurate Wage | <p>Wages are a major outcome of supported employment. Work performed must be compensated with the same benefits and wages as other workers in similar jobs receive. This includes sick leave, vacation time, health benefits, bonuses, training opportunities, and other benefits.</p> |
| Community Based Situational Assessment | <p>Trial work placements in community settings that offer Supported Employee participants an opportunity to try out a particular job for the purpose of assessing their interests, skills, and potential support needs. Community based situational assessments are preferable to assessments in sheltered sites, as they offer more varied types of work, allow for interaction with non-disabled co-workers, and are actual work environments in the community.</p> |
| Competitive Employment | <p>Full-time or part-time work in a business that pays commensurate wages – at or above minimum wage, and benefits equal with co-workers.</p> |
| Customized Employment | <p>A process for individualizing the employment relationship between a job seeker or an employee and an employer in ways that meet the needs of both.</p> |
| Customized Job | <p>The creation of a new or negotiation of an existing job description in a business for an individual with a disability.</p> |
| Day Programs and Sheltered Workshops | <p>Segregated programs that offer skills training, pre-vocational training, make-work vocational</p> |

| | |
|--------------------------|--|
| | activities, field trips, recreation, and other types of special education–related curricula for individuals with severe disabilities. |
| Developmental Disability | A lifelong disability that can be attributed to mental and/or physical impairments and manifests before the age of 22. |
| Discovery | Discovery is a service that helps identify and allow an individual to explore job interests, abilities and challenges to best identify the ideal job placement towards gainful employment. It is a comprehensive and person-centered employment planning support service to better inform an individual seeking an individualized job in a competitive integrated employment setting and create a Discovery Profile. |
| Employment Factors | Employment factors include strengths, resources, priorities, concerns, abilities, capabilities, interest and informed choice. |
| Employment First | A concept built upon the notion that competitive employment should be the first choice for all persons with disabilities. |
| Employment Goal | The employment goal is described as the profession or occupation that the individual is expected to achieve because of the services provided under the IPE [Individual Plan for Employment]. |
| Employment Specialist | A vocational rehabilitation professional who assists individuals with the most severe disabilities with gaining and maintaining work using an individualized supported employment approach; also known as a job coach. |
| Eligibility | For the purposes of this paper, eligibility refers to the process of determining if an individual meets the requirements to receive a particular service or program based upon the professional |

diagnosis and assessment of their disability or limitations.

Employment Providers

Employment Providers are an agency service provider, an independent provider, or an employee of an independent provider who has specific qualifications and training to provide employment services to eligible individuals receiving services through the state developmental disability program.

Employment Specialist/Job Coach

A person employed by a job training and placement organization serving people with disabilities who matches clients with jobs, provides necessary supports during the initial employment period (such as specialized on-site training to assist the employee with a disability in learning and performing the job and adjusting to the work environment)

Enclave Model

A small group of people with disabilities (generally 5-8) is trained and supervised among employees who are not disabled at the host company's work site. Persons in the enclave work as a team at a single work site in a community business or industry. Initial training, supervision, and support are provided by a specially trained on-site supervisor, who may work for the host company or the placement agency. Another variation of the enclave approach is called the "dispersed enclave." This model is used in service industries (e.g., universities, restaurants, and hotels). Each person works on a separate job, and the group is dispersed throughout the company.

Extended Services

Ongoing support services that are needed to support and maintain the individual in supported employment. Extended services are provided after an individual has made the transition from intensive support services funded by the state agency providing

| | |
|----------------------------------|--|
| | Vocational Rehabilitation services to stabilization. Extended services are provided both on and off the job site, as frequently as necessary, to assess and maintain employment stability. |
| Fading | The gradual reduction in supervision and support as the Supported Employee gains skills and independence. Fading begins once the person has mastered parts of their job, whether instruction is provided by a job coach or a co-worker. |
| Functional Limitation | Functional Limitation means a measurable impediment directly related to an employment outcome resulting from the person's disability, in areas such as communication, interpersonal skills, mobility, self-care, self-direction, work tolerance, or work skills. |
| Inclusion | Inclusion of people with disabilities into everyday activities involves practices and policies designed to identify and remove barriers such as physical, communication, and attitudinal, that hamper individuals' ability to have full participation in society, the same as people without disabilities |
| Individualized Education Program | A written document that includes the special educational services a child identified with a disability will receive as part of his/her Free and Appropriate Public Education (FAPE). The student, their family, school staff and invited professional will participate in the writing of the IEP. |
| Individual Placement Model | A person with a disability is placed in a job in a community business that best suits his/her abilities and preferences. Training is provided on the job site in job skills and work related behaviors, including social skills, by a job coach. As the employee gains skills and confidence, the job coach gradually spends less time at the worksite. Support is never completely removed. |

| | |
|--|--|
| Individualized Plan for Employment | IPE is the plan Vocational Rehabilitation uses to reach the individuals agreed upon work goal. The IPE outlines the vocational rehabilitation services needed to achieve the employment outcome. |
| Individual Support Plan | The Individual Support Plan outlines when individuals need support services, what types of paid or natural supports are needed, and where those supports are to be given. |
| Integrated Employment Setting | An employment setting that satisfies the requirements for Competitive Integrated Employment; or an employment setting that provides opportunities for an individual to interact with non-disabled persons. The setting must allow an individual to interact with non-disabled persons in a manner typical to the employment setting. |
| Informed Choice | Informed choice is the active involvement of consumers contributing to the success of and satisfaction with their employment outcomes and in the selection of, a long-term vocational goal, rehabilitation objectives, and vocational rehabilitation services including assessment services |
| Intellectual or Developmental Disabilities | A neurological condition Originates before an individual is 22 years of age or 18 years of age for an intellectual disability; Originates in and directly affects the brain and has continued, or is expected to continue, indefinitely; Constitutes significant impairment in adaptive behavior as diagnosed and measured by a qualified professional; Is not primarily attributed to other conditions including, but not limited to, a mental or emotional disorder, sensory impairment, motor impairment, substance abuse, personality disorder, learning disability, or Attention Deficit Hyperactivity Disorder (ADHD); and |

| | |
|-----------------|--|
| | <p>requires training and support similar to an individual with an intellectual disability.</p> |
| Job Coaching | <p>The activities after placement, typically characterized by one-to-one job coaching provided to an individual at the work site that, are designed to help facilitate the acquirement of the physical, intellectual, emotional and social skills needed to maintain employment. This also involves helping the new employee understand the work culture that they are part of and to facilitate the development of natural supports for the employee to enhance integration into the work culture. As the individual receiving support gains these necessary skills, the intensity level, and frequency of on-site support typically decreases.</p> |
| Job Development | <p>The process of creating a work opportunity on behalf of a jobseeker with a disability that is achieved by earning an opportunity to connect with an employer to learn about business needs and operations and then moving on to propose a job description and get a commitment from the employer to meet and possibly hire the person.</p> |
| Medicaid | <p>A health program for people with limited incomes and resources. Medicaid was established by a 1965 amendment (Title XIX) to the Social Security Act. The program is jointly funded by the state and federal governments, and is managed by the states. Eligibility is determined by a means test, which establishes whether an individual is sufficiently indebted or indigent.</p> |
| Medicare | <p>The United States' social insurance program that was established by the Social Security Act of 1965 (signed into law by President Lyndon Johnson on July 30, 1965) and is administered by the United States government. It provides health insurance coverage to persons aged 65 and over, persons under 65 with physically disabling conditions or congenital physical</p> |

disabilities, or others who meet certain legal criteria.

Mobile Work Crew

A small crew of persons with disabilities (up to 6) works as a distinct unit and operates as a self-contained business that generates employment for their crewmembers by selling a service. The crew works at several locations within the community, under the supervision of a job coach. The type of work frequently includes janitorial or grounds keeping. People with disabilities work with people who do not have disabilities in a variety of settings, such as offices and apartment buildings.

Natural Supports

Support from supervisors and co-workers occurring in the workplace to assist employees with disabilities to perform their jobs, including supports already provided by employers for all employees. These natural supports may be both formal and informal, and include mentoring, supervision (ongoing feedback on job performance), training (learning a new job skill with a co-worker) and co-workers socializing with employees with disabilities at breaks or after work. Natural supports are particularly effective because they enhance the social integration and acceptance of an employee with a disability within the workplace. In addition, natural supports tend to be more permanent, consistently and readily available, thereby facilitating long-term job-retention.

Ongoing Supports

Ongoing supports are services continued indefinitely for individuals with severe disabilities to maintain employment.

Rehabilitation Act of 1973

An act of Congress that prohibits discrimination based on disability in programs conducted by federal agencies, in programs receiving federal financial assistance, in Federal employment, and in the employment practices of federal contractors. Section 504 of the Act created and extended civil rights protections to people with disabilities.

| | |
|--------------------------------------|--|
| Service Provider | The Service Provider through Vocational Rehabilitation is the entity contracted by VR to provide services to a client. Within the Developmental Disability System, the service provider is any agency or individual paid for by Medicaid dollars to provide Title XIX services. |
| Services | <p>Vocational Rehabilitation (VR) provides short-term services to participants with disabilities to get and keep a job that matches their skills, interests and abilities.</p> <p>Employment services provided or funded by the developmental disability system are services that are intended to assist a person with a disability to choose, get, learn, and keep work in an Integrated Employment Setting.</p> <p>Services offered to individuals under IDEA may include but are not limited to: transportation, behavioral support, advocacy for the student, specially designed instruction, modified or adapted instruction and materials, provision of community experiences accommodations necessary to access Free Appropriate Public Education (FAPE), feeding, nursing, proctor or administer state assessments, physical therapy, occupational therapy, and communication support.</p> |
| Sheltered Workshop | Sheltered workshop refers to an organization or environment that employs people with disabilities separately from others |
| Social Security | A social welfare and insurance program more properly known as the Old Age, Survivors, and Disability Insurance (OASDI) program. Created by the Social Security Act of 1935, it has been part of each amendment of the Social Security Act since its inception. |
| Social Security Disability Insurance | A Social Security Administration program that provides benefits to people with disabilities (including those with visual impairments) who |

are “insured” by workers’ contributions to the Social Security trust fund, based on one’s wage earnings (or those of one’s spouse or parents) as required by the Federal Insurance Contributions Act (FICA). Title II of the Social Security Act authorizes SSDI benefits.

State Developmental Disability Agency

State agencies that offer services to individuals with Intellectual and Developmental Disabilities and may operate under a variety of different names such as the local Community Service Boards. Some states operate these services under direct state supervision of local agencies. These local boards and/or state-directed programs frequently also serve individuals with disabilities based on mental health and/or substance abuse issues. Eligibility for these services is usually based on the presence of a disability that meets specific state guidelines, and these eligibility criteria will vary from state to state and may include case management along with a variety of other services (housing, employment, etc.).

Subminimum Wage

Sub-minimum wage refers to a wage paid less than what is actually given as minimum wage. Fair Labor Standards Act provides that sub-minimum wages be paid to:

1. Student-learners;
2. Full-time students employed by retail or service establishments, agriculture, or institutions of higher education; and
3. Physically and mentally disabled persons whose productive capacity is being impaired.

Support Services

Within the developmental disability system, Support Services mean the services of a

Brokerage or CDDP, as well as the uniquely determined activities and purchases arranged through the Brokerage or CDDP.

With the Vocational Rehabilitation System, Support Services include Job Development (also known as Job Placement) and Job Coaching services provided until stabilization is reached, and extended, long-term services are also available.

Within the education system, Support Services are any service that provides the student with the ability to access and benefit from their Free Appropriate Public Education (FAPE).

Supported Employment

Supported Employment is competitive integrated employment where the job matches the participant's interests and abilities, and they require long-term support to be successful on the job.

Stabilization

Stabilization is achieved when the counselor, employment specialist, employer and consumer agree the initial intensive services identified on the IPE have resulted in the consumer demonstrating acceptable job performance and there is reasonable expectation that satisfactory job performance will be maintained with the kind and level of ongoing support services being provided.

Transition Services

Transition services means a coordinated set of activities for a student with a disability that is designed to be within a results-oriented process. It is focused on improving the academic and functional achievement of the student to facilitate the student's movement from school to post school activities.

Vocational Assessment

Vocational assessment is an ongoing process involving the systematic collection of information about an individual's vocational

aptitudes, abilities, expressed interests and occupational awareness.

Workplace and Job Analysis

An analysis of workplace factors and job characteristics that is conducted during job development in order to examine how an existing position may meet a particular jobseeker's abilities and expectations and/or determine possible ways to create or develop a new job description for an individual with a disability that will benefit the business.

Workplace Supports

Supports that exist in a workplace that are available to all employees and may be categorized as environmental, procedural or natural.

Appendix B

Description of Data Sets/Variables

ODDS Demographic Data (Age, SIS Tier, Gender, Race, County, Language Spoken, Language Read, Living Situation, Marital Status, Citizenship, Ethnicity, Vision Impairment, Alternative Language Requirements, Guardian).

Vocational Rehabilitation Screening (VR Counselor Name, Branch Office, Application Date, Eligibility Date, Plan Date, Closure Date, Employment Start Date, Days Application to Eligibility, Days Eligibility to Plan, Days Plan to Closure, Days Application to Closure, Closure Reason Description, Applications Education Level, Eligibility Disability Priority Level, Disability Impairment Description, Employment Work Status, Applicant Work Status, OES Description, Referral Source, Service Category Description, Service Subcategory Description, and Special Programs Description).

ODDS Eligibility Data (Diagnosis Categorization, Program Eligibility, Benefit Plan, Case Description One, Case Description Two, Case Description Three, Case Description Four, ICS Code, ORCR Category Levels, Ambulation Level, Transfer Requirements, Individual Mobility Level, Hygiene Independence, Bladder, Toileting and Bowel Independence, Memory Level, Personal Orientation, Individual Adaptation, Individual Judgment, Individual Awareness, Wandering, Danger, Demands, Cognition, Dressing Independence, Grooming Independence, Housekeeping Requirements, Laundry Requirements, Breakfast, Lunch and Dinner Independence, Individual Medication management, Sleep Requirements, Shopping Independence, 24-Hour Care Need, Transportation Independence, Alcohol Dependence, Alzheimer Screening, Anxiety Screening, Anxiety Screening, Arthritis Screening, Asthma Screening, COPD Screening, Diabetes Screening, Drug Addiction, Heart Screening, Mood Screening, Osteoporosis Screening, Traumatic Brain Injury Screening, and Mental Retardation Level).

CPMS Screening Data (Living Arrangement, DHS Program Code, Cerebral Palsy Level, Epilepsy Level, Mental Retardation Level, Client Motor Dysfunction Level, Client Behavior Dysfunction Level, Health Impairment Level, Other Health Impairment Level, Communication Dysfunction Level, Client Visual Dysfunction Level and Auditory Dysfunction Level).

eXPRS Services Billing (Commercial transportation Services, Commercial Transportation Mileage to-from Work, Commercial Transportation Mileage Community, Attendant Care ADL, Attendant Care ADL 2:1 Staffing, Attendant Care IADL, Attendant Care IADL 2:1 Staffing, Behavior Support Services, Individual Supported Employment Initial Job Coaching, Individual Supported Employment On-going Job Coaching, Individual Supported Employment Maintenance Rate Job Coaching, Individual Supported Employment Retention Outcome, Attendant Care Home or Community, Attendant Care Home or Community 2:1 Staffing, individual Skills Training, Discovery, Employment Path Facility, Employment Path Community, DSA Facility, DSA Community, DSA Facility Attendant Care, DSA Community Skills Training, Small Group Supported Employment, Commercial

Transportation DD Provider to-from Work, Commercial Transportation Transit Pass and behavioral Consultation and Assessment Training).

Employment Outcome Systems Survey (EOS) The EOS survey variables were categorized based upon services provided/received by the participant. Each service had specific variables assigned to it.

Individual Supported Employment Ongoing: Participant Paid Hours Worked Q3 2011 – Q1 2017, Provider Hours Billed Q1 2016 – Q1 2017, Job Coach Hours at the Work Site Q1 2016 – Q1 2017, Percentage of Time Job Coach at the Work Site Q1 2016 – Q1 2017, Participants Hourly Wage Q3 2011 – Q1 2017

Employment Path Facility: Participant Paid Hours Worked Q1 2011- Q1 2017, Provider Hours Billed Q1 2016 – Q1 2017, Participant Hourly Wage Q3 2011 – Q1 2017, Participant Paid Hours Worked Q1 2015 – Q1 2017, Provider Hours Billed Q1 2016 – Q1 2017, Participants Hourly Wage Q1 2015 – Q1 2017

Employment Path Community: Participant Paid Hours Worked Q3 2011 – Q1 2017, Provider Hours Billed Q1 2016 – Q1 2017, Participant Hourly Wage Q1 2015- Q1 2017

Small Group Supported Employment: Participant Paid Hours Worked Q3 2011- Q1 2017, Provider Hours Billed Q1 2016-Q1 2017, Participant Hourly Wage Q3 2011 – Q1 2017

DD53 Services (i.e. Local Match Transportation/Ridership Programs): Did the participant receive this service between 2014 and 2017 and if so what years.