

FACTORS THAT CORRELATE WITH EMPLOYMENT AND EARNINGS FOR
PEOPLE WHO ARE BLIND IN ALABAMA

Except where reference is made to the work of others, the work described in this dissertation is my own or was done in collaboration with my advisory committee.
This dissertation does not include proprietary or classified information.

J. Michael Jones

Certificate of Approval:

Robert G. Simpson
Professor
Rehabilitation and Special Education

Philip Browning, Chair
Wayne T. Smith Professor
Rehabilitation and Special Education

David M. Shannon
Professor
Educational Foundations, Leadership
and Technology

James S. Kaminsky
Professor
Educational Foundations, Leadership
and Technology

George T. Flowers
Interim Dean
Graduate School

FACTORS THAT CORRELATE WITH EMPLOYMENT AND EARNINGS FOR
PEOPLE WHO ARE BLIND IN ALABAMA

J. Michael Jones

A Dissertation

Submitted to

the Graduate Faculty of

Auburn University

In Partial Fulfillment of the

Requirements for the

Degree of

Doctor of Philosophy

Auburn, Alabama
August 9, 2008

FACTORS THAT CORRELATE WITH EMPLOYMENT AND EARNINGS FOR
PEOPLE WHO ARE BLIND IN ALABAMA

J. Michael Jones

Permission is granted to Auburn University to make copies of this dissertation at its discretion, upon request of individuals or institutions at their expense. The author reserves all publication rights.

Signature of Author

Date of Graduation

DISSERTATION ABSTRACT

FACTORS THAT CORRELATE WITH EMPLOYMENT AND EARNINGS FOR
PEOPLE WHO ARE BLIND IN ALABAMA

J. Michael Jones

Doctor of Philosophy, August 9, 2008
(M.S., August 5, 1995, University of Alabama–Birmingham)
(B.S., August 22, 1985, Auburn University)

147 Typed Pages

Directed by Philip Browning

This non-experimental retrospective study examined case records from the state of Alabama's vocational rehabilitation agencies competitive closure rates for blind consumers to determine relationships and to identify the quality of jobs obtained. Four questions were analyzed to identify the relationships and to measure the quality of jobs. Questions one and two queried to find a relationship with competitive verses non-competitive closure status and questions three and four queried to find a relationship to weekly earnings at closure.

One thousand three hundred twenty-eight (1,328) cases were analyzed using multiple regressions to find a relationship between assigned demographic factors and selected program services to the dependent variable of competitive outcomes and weekly earnings.

Research Question 1 asks “What is the relationship between selected demographic factors to the employment status achieved by a consumer upon exiting?” Seven assigned demographic variables were analyzed to find a relationship to competitive outcomes in question one, and three of the variables — onset of disability, gender, and weekly earnings at application — were found to have a relationship. Research Question 2 asks “What is the relationship between selected program services and employment status of a consumer achieves upon exiting?” Five of the 11 program services were found to have a significant relationship to a competitive employment outcome: academic training, job readiness training, job placement, on-the-job supports, and rehabilitation technology. Research Question 3 asks “What is the relationship between selected program services and the amount of income a consumer earned upon exiting?” Two program services, Academic Training and Rehabilitation Technology, were found to have a positive relationship to earnings. Research Question 4 asks, “What is the relationship of selected demographic factors to the amount of income earned by a consumer upon exiting?” Findings show that a person’s disability onset at birth, age, and weekly earnings at application are assigned demographic factors that have a relationship to earnings.

Style manual or journal used: Publication Manual of the American Psychological Association (5th ed.)

Computer software used: Microsoft Word 2007, Statistical Package for the Social Sciences, Version 16

TABLE OF CONTENTS

LIST OF TABLES	xiv
I. INTRODUCTION	1
Nature of the Problem.....	1
Purpose of the Study	2
Research Questions	3
Demographics	4
Summary	7
II. LITERATURE REVIEW	8
Legislative History	9
Programmatic and Personnel Development.....	13
Philosophy.....	16
Consumer Directive Self-Determination	18
Roles of Consumers with Disabilities and Service-Providers	21
Advocacy	21
Informed Choice	28
Research.....	32
Work Skills and Values	33
Alternative Skills	35
Rehabilitation Technology.....	36
Age, Race and Gender	38
Comparative Values.....	45
Self-Employment	48
Program Evaluation	53
Summary	59

III.	METHODOLOGY	64
	Research Questions.....	64
	Description of Data.....	72
	Data Analysis	72
	Summary	74
IV.	RESULTS	75
	Descriptive Data.....	75
	Prediction of Competitive Employment	80
	Model 1—Demographic Variables	81
	Model 2—Program Services.....	82
	Model 3—Hierarchical Model.....	83
	Prediction of Weekly Earnings	84
	Model 1—Demographic Relationship to Weekly Earnings	86
	Model 2—Program Services Relationship to Weekly Earnings.....	87
	Model 3—Hierarchical Model.....	88
	Summary	89
V.	DISCUSSION, IMPLICATIONS AND SUMMARY	91
	Limitations of the Study.....	92
	Assigned Demographics	93
	Program Services	94
	Implications and Summary	99
	REFERENCES	102
	APPENDICES	110
	Appendix A: Rehabilitation Program Services.....	111
	Appendix B: Data Collection Methods	116
	Appendix C: Tables.....	119
	Appendix D: Auburn University Institutional Review Board (IRB) Approval Letter and Information Sheet	125

LIST OF TABLES

Table 1	Correlations Matrix of Variables Showing Overlap	65
Table 2	Demographic Variables	67
Table 3	Correlations Matrix of Variables Showing Overlap	70
Table 4	Demographic Characteristics by Employment Status at Closure	76
Table 5	Program Services by Employment Status at Closure	78
Table 6	Odds Ratios of Competitive Employment Among Cases by Demographic Factors and Services Received.....	81
Table 7	Correlations with Weekly Earnings upon Exit	84
Table 8	Weekly Earnings at Closure (\$) Among Cases by Demographic Factors and Program Services	85

I. INTRODUCTION

Citizens of the United States who are blind represent a very small segment of the overall population. Nevertheless, it has been estimated that approximately 75 percent of the nation's 1.5 million blind citizens are unemployed. This study attempts to measure the relationships of selected demographics and program services to program outcomes for people who are legally blind and who have received services from the Vocational Rehabilitation Program administered by the State of Alabama. The responsibility of vocational rehabilitation is to fund services that assist people with disabilities, including people who are blind, in transitioning from unemployment to employment. For the purposes of this study, questions and representative data will be confined to the population of people served by the Vocational Rehabilitation Program of Alabama, and specifically to those who are identified as being legally blind and who have received services through that agency.

Nature of the Problem

The public vocational rehabilitation system for people with disabilities serves as an employment and training service for people whose physical and mental disabilities create barriers to gaining employment. Despite the nine-decade history of the public rehabilitation system, a full two-thirds of all people with disabilities today—and 70% to

79% of people who are legally blind and of working age—remain unemployed (Becker, 1998; Capella-McDonnall, 2005; Candela & Wolffe, 2001; DeMario, 1992; Wolffe, 2000). Our society strives to prepare people for employment to ensure a future of productivity, independence, and an improved quality of life. Employment also contributes to increased personal fulfillment and social interaction within communities—indeed, it is the foundation upon which social, recreational, emotional, intellectual, and physical well-being rests. Employment for individuals who are blind, however, remains significantly below national averages. The Vocational Rehabilitation Program is a publicly funded program that helps people with disabilities to become employed. Upon completing a program of rehabilitation, a person is measured as having either a competitive or non-competitive employment outcome. The outcome data of the rehabilitation program form the basis for this research study.

Purpose of the Study

Employment rates and earnings represent the final outcome data on blind individuals who have exited the rehabilitation program, and they are a part of the entire picture of employment issues related to this population. This research study attempt to identify relationships between and among selected human demographics, selected program services, and the final outcomes for consumers. The results of other research studies have pointed to factors that, to varying degrees, may possibly have an influence on employment outcomes, and so it is necessary to explore these studies and other research in order to develop a comprehensive picture of issues related to employment outcomes for individuals who are legally blind.

This study was confined to analyzing data collected from the U.S. Department of Education's Office of Special Education and Rehabilitation Services Federal Reporting Form RSA-911. These data report results of state programs that spend federal and state money to help people who are disabled who have requested services related to obtaining employment. The study is further confined to people who are legally blind and reside in Alabama. Again, the goal of this study is to identify relationships among factors that highlight areas of service and personal demographics that suggest best practices for the general problem area.

The following questions were analyzed in an attempt to measure relationships between selected human and program factors and the outcomes of the rehabilitation program for people who are blind and who have voluntarily requested service from the program. Each question seeks to measure a relationship of the rehabilitation program with the employment of people who are blind. Previous research has determined that there is a correlation between a person's demographic features (e.g., race, gender, the presence of additional disability, age, amount of education) and a person's employment status. Additional research has also quantified the fact that the unique services provided to persons seeking employment contribute to their success in obtaining their goal.

Research Questions

Four research questions will be used to help find relationships to the amount of money earned and the type of job obtained by a consumer upon exiting the Rehabilitation Program. Questions 1 and 2 seek to find a predictor relationship with competitive or non-

competitive employment outcomes. Questions 3 and 4 seek to find relationships with earnings at closure. The four questions are as follows:

1. What are the relationships between selected demographic factors and the eventual outcome that a consumer of the Vocational Rehabilitation Program achieves upon exiting?

2. What are the relationships between selected program services and the outcome that a person achieves upon exiting?

3. What are the relationships between selected program services and the amount of income a consumer is reported to be earning upon exiting?

4. What are the relationships between selected demographic factors and the income a consumer is earning upon exiting?

Demographics

Numerous demographic factors, including race, gender, age, education level, and onset of blindness, have been identified by prior research as having relationships with an eventual outcome in the Rehabilitation Program. Demographic factors are noted as the assigned independent variable for the purposes of analyzing this question.

The outcome is referred to as the dependent variable and is a dichotomous variable of competitive versus non-competitive employment achieved upon exiting the Rehabilitation Program. The dependent variable of competitive employment is measured in four different categories, while the dependent variable for non-competitive employment is measured in three categories. Competitive employment, commonly known as employment in the typical employment community, would involve work in an

integrated setting, and it could include self-employment or participation in a state-managed Business Enterprise Program that is performed on a full-time or part-time basis and for which an individual is compensated at or above the minimum wage.

Specifically, a person with a disability who has completed eligibility and has qualified for services under the Rehabilitation Act chooses their employment goal and subsequent outcome. The program offers seven choices that ultimately define whether a case record will be recorded as competitively or non-competitively employed.

1. *Employment without Supports in an Integrated Setting* is full-time or part-time employment in an integrated setting without ongoing support services, which is work performed for wages, salary, commissions, tips, or piece-rates and is designated as a competitive employment outcome.
2. *Extended Employment* refers to work for wages or salary in a non-integrated setting for a public or nonprofit organization, and it is defined as a non-competitive employment outcome.
3. *Self-employment* is work for profit or fees, including operating one's own business, farm, shop, or office, and it is designated as a competitive employment outcome.
4. *A State Agency-Managed Business Enterprise Program* comprises vending facilities that operate under the Randolph-Sheppard Act and other small businesses operated by individuals with significant disabilities under the management and supervision of a state Rehabilitation Program; it is designated as a competitive employment outcome.

5. *Homemakers* are persons whose activity is keeping house for others in their households or for themselves if they live alone. This designation is considered a non-competitive employment outcome.
6. *Unpaid Family Worker* is a person who works without pay on a family farm or in a family business; this is considered a non-competitive employment outcome.
7. *Employment with Supports in Integrated Setting* is full-time or part-time employment in an integrated setting with ongoing support services for individuals with significant disabilities, and it is designated as a competitive employment outcome.

The Rehabilitation Act offers 22 unique services to help consumers prepare for and obtain employment. For the purpose of research question 2, selected program services are those that are provided to the consumer under the Rehabilitation Act to determine eligibility and to develop a plan for service. Examples are disability augmentative-related services (skills training designed to enhance human performance) and rehabilitation technology (equipment and modifications also designed to enhance human performance).

The dependent variable in research questions 3 and 4 is income. Income information is collected on Federal Form RSA-911 and is reported as a person's weekly earnings at the time the person's service record was closed. As would be expected, a person who received a competitive employment outcome after services were provided would have reported weekly earnings, while the reverse would be expected for someone receiving a non-competitive employment outcome.

Summary

This study identifies the relationships between selected demographic variables and selected services received by participants in the Alabama Program for Rehabilitation Services who are legally blind. The answers to the four research questions are intended to suggest factors that relate to the employment of this target group. First, the study presents, in Chapter 2, a historical review of literature that reveals the growth of the disability movement, starting with the legislative history and tracing the process by which persons with disabilities have become empowered members of society. Chapter 3 outlines previous research that addresses factors that correlate with employment for people who are blind or otherwise disabled, and the chapter concludes with a presentation of the current data and the methods that will be used to answer the research questions. Chapter 4 discusses the results of the study, and Chapter 5 contains recommendations for future research in this important area.

II. LITERATURE REVIEW

The unemployment rate in America for people who are blind has been consistently placed between 70 percent and 79 percent (Becker, 1998; Candela & Wolffe, 2001; Capella-McDonnall, 2005; DeMario, 1992; Wolffe, 2000). Various factors, both programmatic and human, contribute to this dismal labor force record. Central to this chapter is the examination of factors that correlate with employment outcomes for individuals who are blind.

The data bank to be explored, known as Vocational Rehabilitation, administered by the Department of Rehabilitation Services and hereafter referred to as the Rehabilitation Program, is mandated to annually provide the U.S. Department of Education with a list of individuals with a disability who received services and the outcome of those services. The data are reported on Form RSA-911 and is made available to the public for inspection. The data includes information on employment status, type of employment, and weekly occupation and earnings, along with variables consisting of age, gender, race, type of disability, severity of vision loss, onset of disability, secondary disabilities, access to rehabilitation technology, education level, vocational training, employment status, and other services that lead to an employment or independent living outcome.

This chapter provides the reader a framework for understanding the employment of people with disabilities, in general, and with those who are blind, in particular. Included in this review are the topics of legislative history, programmatic and personnel development, philosophy, and roles of consumers with disabilities and their service providers. This introductory section provides an important context from which to understand the nature of the problem being studied.

Legislative History

Beginning as a demonstration project in 1920 and with an allowance of \$750,000, the Rehabilitation Program that was charged to provide jobs and training to Americans with disabilities grew into a formula-based nationwide program serving people in all states with employment and independent-living assistance. While the original programs offered guidance, counseling, and vocational training, they were designed exclusively for industrially injured workers who wanted to return to work (Carney, 1990) and did not include blind people as being eligible for obtaining an employment outcome. In 1943 the Barden-LaFollette Act amended the Rehabilitation Act to mandate that blind people be served by the Rehabilitation Program. Prior to that, those with visual impairments were relegated to exploring piecemeal services from private or educational groups in order to find and retain jobs (Wolffe, 2003) while public state programs were administered by Commissions for the Blind.

The Massachusetts Commission was established in 1906 and the New Jersey and Ohio commissions were established in 1908; however, they worked largely outside of the Rehabilitation Program (Lewis & Petterson, 1998). Prior to state coordination and

intervention, blind persons and persons with other disabilities were placed in asylums to remove them from society as it was thought that providing a strict regimen was the best approach for solving social problems (Vaughan, 1993). Following that belief, as early as 1848, special schools were established to train and educate people with disabilities, away from the normal population (Pennell 2001). That period of time produced a growth in the number of asylums and special purpose institutions established to educate and otherwise care for categories of people who were disabled, with schools for blind children sprouting up in almost every state during the early to mid-nineteenth century (Vaughan, 1993).

Approximately one hundred years later, the focus of service delivery began to shift with the philosophical approach of normalization which exposed segregated institutions as being places that strip individuals with disabilities of their humanity and connection with society. This established the community approach to a service delivery system as the vision for best practices (Pennell, 2001). Normalization has been defined by Wolfensberger (1972) as “utilization of means which are as culturally normative as possible in order to establish and/or maintain personal behaviors and characteristics which are as culturally normative as possible” (p. 28).

The 1920 Smith-Fess Act (P.L. 66-236) was the beginning of legislation creating the Civilian Rehabilitation Program. It provided 50 percent of matching funds to state funds allocated to vocational rehabilitation (Szymanski, King, Randall, & Jenkins, 1989). In 1936 the United States Congress passed the Randolph-Sheppard Act, codified as 20 U.S.C. Section 107 et seq. Section 107, with the following wording:

... Operation of vending facilities authorized with preferences, regulations, and justification for limitation on such operations for the purposes of providing blind

persons with remunerative employment, enlarging economic opportunities for the blind, stimulating the blind to greater efforts in striving to make themselves self-supporting. Blind persons licensed under the provisions of this chapter shall be authorized to operate vending facilities on any property. This program has become the nation's largest self-employment Rehabilitation Program employment outcome for blind people. (Schaefer & Moore, 2002)

The Rehabilitation Program experienced legislative growth in 1943 with the Bardon-LaFollette Act (P.L. 78-113) which expanded services to persons with disabilities in the form of (a) mental retardation, (b) mental illness, and (c) blindness (Szymanski et al., 1989). The Office of Vocational Rehabilitation was then established to provide the supervision for vocational rehabilitation, including blind candidates, regardless of how the programs were administered in the states (Lewis & Petterson, 1998). The Amendments to the Rehabilitation Act of 1954 (P.L. 83-565) created grants to colleges to train professionals at the master's degree level to provide rehabilitation services to disabled persons. Additionally, the Rehabilitation Program increased the matching fund to 66 percent. Services to persons with mental illness and mental retardation were greatly expanded through program grants for (a) research and demonstration, (b) extension and improvement, and (c) rehabilitation facility development (Szymanski et al., 1989).

Rehabilitation legislation was again greatly amended with the 1973 response to social trends and to a movement of disabled consumers seeking more influence and autonomy (Szymanski et al., 1989). After much protest from disabled people, legislation was passed by Congress and was enacted as the Rehabilitation Act of 1973 and was regarded as major civil rights legislation for persons with disabilities (Browning,

Rhoades, & Crosson, 1980). The Individual Written Rehabilitation Plan, later renamed Individual Plan for Employment, is a contract between the consumer and the program which was mandated in 1973 to ensure consumer involvement in planning (Szymanski et al., 1989). Also in 1973, the Rehabilitation Act was amended by adding Sections 501 through 504 which mandated that persons with disabilities receive equal access to programs receiving funds for transportation, education, and employment (Szymanski et al., 1989). The 1973 revisions also initiated research and development projects allowing states to establish independent living services and service delivery systems for older people who are blind (Orr & Rogers, 2001).

Expansion of the Rehabilitation Program continued with the 1978 amendments, not necessarily intended to develop employment but to establish independent living services (Szymanski et al., 1989) and the amendments made in 1986 added supported employment as an outcome for rehabilitation services (Szymanski et al., 1989). Supported employment is defined by the Workforce Investment Act in Title Four, Section Six, Paragraph 36, as “ongoing support services and other appropriate services needed to support and maintain an individual with a most significant disability in supported employment.” These services are provided singularly or in combination and are organized and made available in such a way as to assist an eligible individual to achieve competitive employment.

In 1998 Congress consolidated government training programs for employment, including the Rehabilitation Program, under a single funding amendment entitled the Workforce Investment Act (WIA) with the goal of integrating services by capturing their funding streams (Cohen, Timmons, & Fesko, 2005). Title I of WIA provides assistance to

states to develop state and local workforce systems. Title II creates the Adult Education and Family Literacy Act. Title III creates amendments to the Wagner-Peyser Act of 1933, which provides funds to the U.S. Employment Service, and Title IV amends the Rehabilitation Act of 1973, which provides vocational rehabilitation services for individuals with disabilities (Cohen, Timmons, & Fesko, 2005). Self-employment outcome was also added in the 1998 Reauthorization of the Rehabilitation Act (Arnold & Ipsen, 2005).

Legislative development will continue as Congress reauthorizes the Act but already the gains that the consumer has received over the past thirty year have been noteworthy. In summary, the consumer has moved from a passive recipient to a full partner with the enactment of the Individual Plan for Employment and the mandate of Informed Choice. Progressive legislation along with supportive employment and self-employment allows even persons with the most severe disabilities to complete in the workplace. However, legislation alone does not deliver services to the consumer; personnel are required to implement the law. The next section addresses some of the developments that the Rehabilitation Program has undertaken to insure that well trained personnel are employed.

Programmatic and Personnel Development

Rehabilitation counselors provide services funded by the Rehabilitation Act aimed at assisting people who have (a) physical, (b) sensory, (c) emotional, and (d) intellectual disabilities to achieve economic and psychological independence (Cook, 2000).

The master's degree is the entry-level educational requirement to practice in the field of rehabilitation counseling. A rehabilitation counselor is trained to provide "persons with disabilities assistance to achieve vocation, social, and personal functioning utilizing professionally recognized practices to acquire employment in competitive settings" (Lewis & Petterson, 1998). Rehabilitation counselors receive specialized education from some eighty master's degree programs accredited by the Council on Rehabilitation Education. More than thirty rehabilitation doctoral degree programs educate faculty to staff the master's degree programs. Master's level rehabilitation counselors who meet the criteria of education, knowledge, and experience are awarded national professional recognition as Certified Rehabilitation Counselors. Many rehabilitation counselors are licensed in their respective states as Licensed Professional Counselors. The field is led by two professional organizations: the National Rehabilitation Counseling Association (NRCA) and the American Rehabilitation Counseling Association (ARCA). Two agencies, the Rehabilitation Services Administration and the National Institute on Disability and Rehabilitation Research (NIDRR), provide funding for rehabilitation counseling education and research (Cook, 2000).

As early as 1932 there was concern about the degree or adequacy of the personnel development of home teachers of the blind. These teachers were mainly women and the majority was blind, lacked formal degrees, and found themselves interacting with the rapidly expanding profession of social work which was developing its own standards for educational requirements (Vaughan, 1997). In 1932, a regional organization of home teachers appointed its own committee to develop minimum standards of practice

(Vaughan, 1997). Further impetus toward standards came from the government in the 1939 Amendments to the Social Security Act which mandated that all persons employed in the federally funded welfare programs participate in a merit system. “In many states the commission for the blind would have to meet the same civil service standards as those of the sighted civil service workers employed in other facets of welfare assistance” (Lewis & Petterson, 1998).

In 1938, the American Foundation for the Blind convened a special conference to determine the philosophy and principles of home teaching. Following this, the American Association of Workers for the Blind (AAWB) appointed a board for certification of home teachers. The new standards were adopted by the 1941 convention of the AAWB and included two levels. Class 1 required two years of college training including courses in social work and education along with knowledge of Braille, typing and proficiency in six handicraft skills. Four years of experience could be substituted for the college training. Class 2 required completion of the college course work of Class 1 and at least one year of post-graduate training in social work (Lewis & Petterson, 1998).

Home teachers for persons who were blind originated in England in the mid-1800s and became a service of the American Bible Society in 1882 to teach tactile reading skills to persons who had lost their vision. The first home teachers were blind. By 1926, twenty-five states had established some type of home-teaching service (Lewis & Petterson, 1998). Rehabilitation teachers are certified through the Association for Education and Rehabilitation of the Blind and Visually Impaired which grants two types of certification: Type AA for persons with degrees in rehabilitation teaching and Type A for persons with degrees in education or a related field (Lewis & Petterson, 1998).

Legislative histories and legislative strategies along with the development of personnel standards have both advanced the Rehabilitation Program to better serve the individual with a disability. The movement from unfunded private Rehabilitation Programs to annual funding of a nationwide Rehabilitation Program along with legislative changes allowing persons with the most severe disabilities has opened opportunities for the person with a disability. The legislative mandates and changes have also mirrored the professional perspective of serving persons with disabilities. The days of service being delivered in isolated institutions has been replaced with services being provided in natural environments. These legislative and pragmatic changes have also been parallel by the consumer; the disabled person who is a consumer of the Rehabilitation Program has grown in outlook and philosophy. Next is a review of the emerging and developing philosophy of persons with disabilities.

Philosophy

According to Jernigan (1970), groups of human beings, minorities, begin their philosophical maturation with an identity crisis, confusion and doubt as to whom and what they are. He questions blind people as either organized or unorganized as having a collective identity (Jemigan, 1970). Confusion and doubt about one's identity can be attributed to social class devaluation in society; people are first devalued because of impairment in their senses, bodies, or minds (Wolfensberger, 2000). Further, the traditional images and myths of blindness have come under attack by the blind people themselves in an organized group known as the National Federation of the Blind which

began promoting a positive self-image by renouncing the old identity of helplessness and replacing it with a new identity of competent, normal, and equal (Jernigan, 1970).

Within the spectrum of social movements, the disability movement can be categorized as an identity movement (Kirchner, 2000). Putnam (2005) identifies pride as an element of disability identity. Pride is composed of four components: (a) claiming of one's disability; (b) believing that disability is a common human condition; (c) believing that disability is not a negative condition itself but can become so in certain cultural, social, and physical environments; and (d) recognizing this characteristic as engendering membership in a cultural minority group.

Putnam (2005) further illustrates that persons with disabilities possess the characteristics necessary for minority group membership, which are (a) stigma, (b) social distance, (c) non-acceptance, (d) negative stereotypes, (e) prejudice, and (f) discrimination. Thus, part of the philosophical social change that disabled persons pursue involves self-advocacy, a national movement which began to pick up momentum in the 1980s. Self-advocacy is having the ability to stand up for oneself and for others by speaking up, speaking out, and speaking loud (Pennell, 2001). People with disabilities have moved from meekly accepting protection from the hardships of life to boldly asserting that their goal is to be an integral part of community (Gould, 1986). People with disabilities are rejecting the common expectation of professionals and parents of looking for lifelong security through planned supported environments and instead are seeking security through relationships and income (Gould, 1986).

Self-advocacy by people with disabilities is manifested individually and/or in groups, by acting on behalf of oneself or others. Often the advocacy is directed at issues

that affect a wide scope of services (Gould, 1986). Further, according to Pennell (2001, p. 227), self-advocacy means having:

1. The opportunity to understand rights and responsibilities, to advocate for those rights, and to make choices.
2. The awareness that others can empower people to take control over their own lives to make decisions and take the consequences.
3. Self-advocacy is a process — a way of life that is an ongoing learning experience for everyone involved. It means taking risks and pursuing dreams. It means making mistakes and learning from them.
4. Self-advocacy is a revolution for change to enable people with and without disabilities to live in harmony.
5. Self-advocacy is founded on the belief that together all people can create the spark to light the fire of a better life for all.

Consumer Directive Self-Determination

The 1980s self-advocacy philosophy gave way to the 1990s philosophy of self-determination, which is a demand for shifting power from the system to the individual, allowing people to choose how they live and to be supported in ways that facilitate their preferences (Pennell, 2001). Self-determination is defined as an individual characteristic of voluntary actions that assist people to be causal agents in their lives (Wehmeyer, 2005). Self-determined individuals are recognized as persons who know: (a) how to choose, (b) what they want, and (c) how to get it. From an awareness of personal needs, self-determined individuals choose goals, and then pursue them. This involves asserting

an individual's presence, making his or her needs known, evaluating progress toward meeting goals, adjusting performance and creating unique approaches to solve problems.

Self-determination has a focus on four principals:

1. Freedom — the ability of individuals to dream and plan a life with necessary support rather than to purchase a preplanned program from the system.
2. Authority — the ability of a person with a disability to control a certain sum of dollars in order to purchase supports.
3. Support — the arranging of resources and personnel, both formal and informal, that will assist an individual in everyday living.
4. Responsibility — the acceptance of a valued role in a person's community through competitive employment, organizational affiliations, spiritual development, and general caring for others in the community, as well as accountability for spending public dollars in ways that are life-enhancing.

The blind population was the first group of people with disabilities to organize for the purpose of promoting empowerment amongst the disabled. In 1940 the National Federation of the Blind was established with the intent of altering the outside view of blindness to encompass a more positive image of this group of individuals (Vaughan, 1993). The American Coalition of Citizens with Disabilities operated as an umbrella consumer organization from 1975 until 1983. The Coalition would serve as a collective voice for all groups of persons with disabilities. During the passage of the 1973 Rehabilitation Act the Coalition steadfastly monitored

the implementation of the Act until 1983 when it would fall out of existence (University of California, 2004).

Kosciulek (1999) advocates a philosophy of consumer empowerment in the rehabilitation process known as Consumer Direction. Consumer Direction encourages individuals with disabilities to develop the skills which allow them to take control over the policies and practices that directly affect their lives, to make their own choices and to control their environment. In a consumer-directed system, individuals with disabilities assess their own needs, determine how and by whom these needs should be met, and monitor the quality of services received.

Consumer-directed disability policy and Rehabilitation Programming should be based on the presumption that consumers with disabilities are the experts on their service needs. An informed consumer is the best authority on what his or her service needs are, how these needs are best met, and whether these needs are being met appropriately. The consumer should be presumed competent to direct services and make choices, regardless of the:

1. Variety and type of services and choices.
2. The ability of consumers with disabilities to control and direct the delivery of services. This component relates to the amount of control consumers have over how, when, and by whom services are delivered.
3. The availability of appropriate information and support.
4. The level and quality of participation that consumers have at the policy-making level; for example:

- i. Creating a voucher system for rehabilitation that would empower consumers to decide which services they wished to purchase and whether they wanted to receive these services from a public or private agency. By encouraging competition between agencies and promoting accountability, the implementation of a voucher system may also improve the efficiency.
- ii. Participatory Action Research.
- iii. Counselor-Consumer Relationships.

Roles of Consumers with Disabilities and Service Providers

Kosciulek (1999) and Vaughan (1993) summarize that a consumer-directed approach is one in which the consumer has the ultimate responsibility for the services (Vaughan, 1993).

Advocacy

Disability advocates, including those who are trained as researchers, have had a significant impact on disability research during the past 20 years. The most significant contribution has been to promote a shift away from a medical model of disability and towards a sociopolitical model that stresses the interaction between the person with the disability and his or her environment (O'Day, Goldstein, 2005).

Historically, service choices and opportunities for partnership within the Rehabilitation Program for consumers have been very limited. Consumers could choose whether or not they wanted help from the program but they had little to no input into what kind of help they would receive and the type of job they would ultimately obtain.

Fifty-three years after the first enactment of rehabilitation law, the Rehabilitation Act of 1973 mandated consumer input under the Individualized Written Rehabilitation Plan, later renamed the Individual Plan for Employment (IPE). The IPE is a contract between a rehabilitation agency and its consumer which makes the consumer a partner in choosing goals and services. This contractual relationship was the beginning of a consumer movement to strengthen the consumer's role as a partner in service planning and delivery and would eventually become strong enough to give consumers of rehabilitation the power of choice in contracting services for themselves. The continual growth of the Rehabilitation Program consumer movement has been compared to the rise of the women's movement. The social forces that are fueling this movement are cultural diversity, aging of the population, legislative initiatives, and technological/environmental factors (Rhoades, McFarland & Knight, 1995). The movement towards greater consumer control of the process was not without criticism as some thought that the newly created contract relationship stripped Counselors of their autonomy (Emener, 1991). Nevertheless, the movement towards more input and control was not slowed by the criticism of professionals.

The next advance in consumer control came when the empowering words informed choice were written into the Reauthorization of the Rehabilitation Act of 1992. With this subtle change, the consumer became a full partner with the Rehabilitation Program. Although consumers have the right to full participation in planning and decision-making, the rehabilitation industry must emphasize services that facilitate learning advocacy skills for decision making if this partnership is to have meaning. Simply providing an individual with choices is insufficient; there must be an effort to

ensure that the person has the opportunity and skills to be an active participant in the decision making process (Shaw, 1998). Consumers demonstrate variation in skill and experience in choice-making. Thus, service providers must provide consumers with as much decision-making autonomy as possible while being directed by an individual's needs (Hagen-Foley, Rosenthal, & Thomas, 2005).

The rehabilitation discipline's function is to help a person understand the process of becoming an interdependent, participating and contributing member of society (Shaw, 1998). There are two potential deficiencies in the existing system. First, rehabilitation counselors who are not equipped with the skills for problem solving are being hired. Second, an assumption is being made that while the consumer may be an active partner in the construct of long-term planning for program services and outcomes, that they lack the advantage of advocacy skills.

Historically, rehabilitation agency staffs strengths have lied in nurturing rather than analyzing and problem solving. A person with a disability seeking employment and training services from a Rehabilitation Program system is better served by a Rehabilitation Program worker who has the ability to assess the strengths and weaknesses of the consumer and suggest strategies to accomplish a goal (Shaw, 1998). Alternatively, the consumer is not served by kindly intentions or good will from a Rehabilitation Program worker with only traditional options to offer. Just as Rehabilitation Program employees do not always have strong problem solving skills, the same can be said for the consumer. Persons with disabilities arrive at the rehabilitation system with all levels of cognitive sophistication, tolerance levels for confrontation, and confidence. The most effective rehabilitation professionals will help the consumer to build self-confidence and

will assist them in developing skills to advocate for themselves so that they will be better able to navigate the barriers to integrating into the work world (Shaw, 1998).

Advocacy is a valuable tool for rehabilitation counselors to teach consumers in order to help make informed choices throughout their lives. However, rehabilitation counselors must first be problem solvers themselves before they can teach their consumers advocacy skills. Advocacy is often a mission, a call to act, and a duty to respond for consumers of rehabilitation services and others. A true advocate knows that the best practice originates from the soul (Kiselica & Robinson, 2001). Being an advocate is a heavy cross to bear; there are dos and don'ts, strengths and weaknesses, and rewards and punishments that accompany this role. An advocate doesn't pause for the rewards or flinch at the punishment but rather they set a goal and follow through until that goal is reached.

There are many pitfalls of serving as an advocate for oneself or others, including feeling emotionally drained, being viewed as a troublemaker, placing your job in jeopardy, and becoming the target of backlash from colleagues at work or enduring the harassment of intolerant individuals (Kiselica & Robinson, 2001). Just as there are punishments there also many rewards for people who assume the role of an advocate and teach advocacy skills. The rewards are these: self-confidence, self-determination, personal empowerment and opportunities for learning about and contributing to communities and countries. Kiselica and Robinson (2001) suggest that a moral imperative provides the inspiration to being a successful advocate and provides rewards such as seeing one person live a more fulfilling and happy life, and to a much larger degree, realizing that we have helped to free an entire nation. From the perspective of a

rehabilitation service provider, it is the reward of seeing a person becoming free because of choices made from learned advocacy skills that far surpasses any negative consequences.

Advocating for the urgent social issues of our time or for one's own situational change is demanding work that requires certain attributes and a multitude of skills.

Kiselica and Robinson (2001) identify the following skills for one to develop:

1. *The capacity for commitment.* A rehabilitation counselor first demonstrates commitment through professional actions, returning phone calls, following up on assignments, being technically competent in their case management. The counselor then may need to teach commitment by giving assignments with both short and long term deadlines. The assignments should match the cognitive sophistication level of the consumer, but they must be given to help the consumer become a partner in the process. Achieving the goal of employment takes more than one person practicing commitment, it takes a partnership.
2. *Appreciation for human suffering.* The goal is for someone to look beyond their own situation to that of others. A counselor can help grow this skill by encouraging a consumer to participate in consumer organizations and civic organizations. These types of groups historically have as their mission the relief from suffering for oppressed persons. Until one can understand the struggles of others they will never be able to place in to proper perspective their own struggles.

3. *Nonverbal and verbal communication skills.* A lack of communication skills has been identified as one of the greatest barriers to success in the work place; nevertheless, this is a skill that is required for success in any human interaction. The good news is that this skill is easily improved with formal training.
4. *The ability to maintain a multi-systems perspective to use individual, group and organizational change strategies.* Encouraging a consumer to take active part in issues and teaching problem-solving skills would be an ideal method to encourage advocacy skills for creating change. The minimum that a rehabilitation counselor can do to foster a systems approach is to teach the consumer about the client appeal process used in rehabilitation and the systematic methods for creating change within the rehabilitation service delivery system.
5. *Knowledge and use of the media, technology, and the internet.* Classes in learning technology and media relations are excellent opportunities to teach organization and system operations skills. These classes are readily available for the rehabilitation counselor to purchase for their consumer.
6. *Assessment and research skills.* A rehabilitation counselor should assign to the consumer projects that will develop investigative skills. A first project could be to completely research one's disability and the available community services. Teaching a person how to use a reference librarian, chamber of commerce, and local consumers are very basic beginning points to foster investigative skills. A counselor should not miss an

opportunity to help a consumer to take action steps to finding information, which will in turn develop self-esteem and confidence.

The list of advocacy skills can be completed by adding developing self-control and self-marketing, two of the most difficult yet beneficial skills for anyone to master. A person wishing to be an advocate must understand and master these skills and put them into practice.

Who can advocate? Rehabilitation counselors, persons with disabilities, ordinary people, organized groups, anyone can advocate. Wehmeyer (2000) identifies three advocate statuses of the disability advocate movement: (a) professional advocate, (b) parent advocate, and (c) self-advocate. Regardless of which status one advocates from — parent, professional or consumer — the strategies are the same. Just as groups have leaders, followers, and workers, individuals also reflect these same levels of commitments. Individuals can lead, follow or work in advocacy. The work of an advocate is to identify an issue (e.g. policy, practice, or service) that needs to be changed or improved (Linhorst, Eckert, Hamilton, & Young, 2001). Having identified the needed change, the advocate then researches and analyzes all aspects of the issue, writes about the conclusions of his/her research, plans a course of action, makes public speeches about the needed change, takes action, and evaluates the progress. This usually occurs in the form of organizing meetings, holding public rallies, distributing information, and voting in civil elections (Linhorst, Eckert, Hamilton, & Young, 2001).

A goal of advocacy might be to help someone become a part of change, both present and future. Linhorst, Eckert, Hamilton, and Young (2001) say that consumer advocacy is maximized when it is integrated into the formal decision-making structure of

agencies. An example of this would be an advocacy group, wishing to influence the policy decisions of an agency, lobbying to have a member of its group appointed to the executive board of directors of that agency. Far too many policies and practices are forced upon consumers without their input or influence. Advocates that become a part of the executive-level decision-making process have achieved a goal that will ultimately lead to freeing people (Linhorst, Eckert, Hamilton, & Young 2001).

Whether advocating as a parent, a professional, or a consumer, the capacity for commitment and an appreciation for human suffering, raising awareness about the needs of neglected populations and fighting for the civil rights of exploited people are profound human experiences that require advocates to be committed humanitarians (Kiselica & Robinson, 2001). Advocacy skills will help any consumer of any system apply better decision making to exercising choice, and especially to exercising choice in the rehabilitation process.

Informed Choice

A rehabilitation professional should recognize that there are certain assumptions and consequences associated with choice and that some of these assumptions revolve on the dynamic processes of making a choice. For a choice to be viable, the rehabilitation process should allow for the customization of information. Choice should be an inherent factor in the operating standards of providers. Choices must be understood to be meaningful with real life consequences, for example: labor market information, resources, the nature of assistance available and the type of assistance needed (Shaw, 1998).

Problems could arise as consumers attempt to assert the authority that has been provided by the informed choice mandates or if there is a clash in values. For example, counselors value job carving and employment outcomes while consumers tend to value person-centered services and career and employment counseling (Wolf-Branigin, Daeschlein, Cardinal, & Twiss, 2000). There may always continue to be value differences between consumers and professionals however, the regulations that govern the Rehabilitation Program have mandated informed choice and a plan for complying with this mandate along with imparting advocacy skills should be productive to the rehabilitation process. Through the process of informed choice, consumers can learn to use profiles and portfolios in self-assessment and career planning (Thomas, 1999). Rehabilitation professionals wishing to commit to an empowerment approach to rehabilitation service delivery should facilitate and maximize opportunities for individuals with disabilities to have control and authority over their own lives (Emener, 1991). Thomas (1993) suggests that rehabilitation professionals should seek to enlarge the information and choices that are available to consumers. Assisting the consumer with acquiring information is the foundation upon which a rehabilitation counselor should apply the following strategies that have been synthesized from the 1998 regulations governing the Rehabilitation Act. These regulations (Section 361.52) mandate the strategies for providing the consumer with informed choice:

1. *Inform the consumer:* first educate by clearly explaining to a consumer the rights provided in the Act. Inform the consumer that they have the right to explore a variety of employment goals, and the right to choose service providers and to evaluate the program.

2. *Coach:* Once the consumer has been informed and educated, the professional must guide, coach and provide information on making program choices in the areas of employment goals and specific services needed to achieve the goal. The regulations require that the information include: (a) the cost of the service, (b) the length of the program, (c) the location of the program, (d) consumer satisfaction, (e) feedback with the program, (f) the qualifications of the program, (g) types of services, both related and non-related, that the program offers, (h) the ratio of time spent in integrated/segregated settings, and (i) the success of the program in easily understood and quantified results.
3. *Create a flexible procurement process that allows the consumer to have choice in purchasing services from a variety of providers:* provide the consumer with a list of vendors instead of dictating where a service or equipment will be purchased from which the consumer can research and evaluate. Providing choice in this simple manner is both educational and freeing to the consumer.

Under the informed choice regulations, consumers are not at the mercy of rehabilitation providers, instead, the balance of power has shifted in the relationship. The ability of Rehabilitation Program workers to serve consumers efficiently will depend upon on how well they adjust to the consumer empowerment. Inevitably, it will be the counselors' skill in problem solving and in creating a partnership with the consumer that will determine the success of a particular Rehabilitation Program (Rhoades, McFarland, & Knight, 1995). Counselors must inform, assist, and create an environment in which

both the consumers as the counselor feel open to exchange information, negotiate, and challenge each other. A rehabilitation service provider must focus on the reward of freedom.

Advocacy skills and exercising informed choice in the rehabilitation process can both be best mastered by applying the CORE principles: (a) commitment, (b) opportunity, (c) role modeling, and (d) empowerment. Rehabilitation professionals and consumers must be committed to their mission, a mission that embodies creating opportunity for others, acting as a responsible role model, and seeking to empower others with information and skills. Commitment drives the process, it is the foundation of the CORE principles and without it one cannot be competent in their work nor can they have any appreciation for themselves or others (Rhoades, McFarland, & Knight, 1995).

Rehabilitation counselors have the ability to provide opportunity for their consumers to learn through advocacy skills and exercising informed choice. Role modeling is demonstrating commitment through behaviors, being punctual, prepared, and completing tasks all behaviors that will help consumers be successful in a career. With combined commitment, ability to create opportunity and role modeling one will empower a person with the skills necessary to advocate for themselves and make sound choices (Rhoades, McFarland, & Knight, 1995).

The development of the consumer of the Rehabilitation Program has moved from one of passive acceptor to one of active participant, fueled by the philosophical development of self-determination and self-control and by coalescing in advocacy groups. Legislative changes in the Rehabilitation Program have also paralleled the growth of the consumer. Informed choice and Individual Plans for Employment have given

power and control to the consumer. Learning to embrace the philosophy of normalization, empowerment, and consumer-directed services will continue the empowerment of the consumer. Legislative advance, the development of rehabilitation personnel, and the philosophical empowerment of the consumer are components that currently describe the Rehabilitation Program, but how is the program functioning, what strategies for service delivery, strategies for employment development, and what are the training areas and skill development needs for the consumer? The answers will be revealed in the research section where a detailed examination of the work skills, employment options, and personal and programmatic characteristics will be revealed.

Research

This section focuses on research from the past 17 years of employment outcomes for persons who are blind and have received services under the Rehabilitation Act, along with comparable studies of other persons with disabilities other than blindness. The research in this chapter reveals various factors such as: (a) work skills, (b) program evaluation, (c) demographic factors, (d) self-employment, (e) use of assistive technology, and (f) acquiring of alternative techniques. These factors, among others, have all been found by researchers to have had an impact upon whether a person would receive a competitive employment outcome from the Rehabilitation Program.

Competitive employment is defined as employment in the competitive labor market in an integrated setting for which an individual is compensated at or above the minimum wage (Element-by-Element Instruction: Case Service Report form RSA-911,

2002). Competitive employment in the Rehabilitation Program is noted in four different occupational groups:

1. Employment in an integrated setting without supports;
2. Self-employment, which is work for profit including operating one's own business;
3. Business Enterprise Program: operation of a small business under the 1936 Randolph Sheppard Act; and
4. Employment with support in an integrated setting.

Three other employment closures are indicated and collected from form RSA-9 11, however, they are not considered to be competitive employment outcomes. They involve persons who achieved an outcome of:

1. Extended employment in a non-integrated setting;
2. Homemaker or housekeeper; or
3. Unpaid family farm or business worker.

These are considered to have had a closure outcome, but not one that lead to a competitive job.

Work Skills and Values

Klinger (2002) reports that attempts to integrate people with disabilities into organizations have yielded mixed results. The number of unemployed people with disabilities continues disproportionately as 67 percent of adults with disabilities and 74 percent with severe disabilities are unemployed (Klinger, 2002). The population of people with disabilities offers diversity and represents a wealth of untapped talent; however, corporations are ignoring this pool of talent and instead are paying large sums

of money to bring in foreign nationals to remedy the recent labor shortage. Klinger (2002) sees three reasons for the lack of diversity in the workplace.

1. Perceptual and attitudinal barriers: stereotyping is a practice continuing from an unenlightened past: fear, uncertainty of how to act, uncertainty of saying the wrong words, and of isolating the person.
2. Perceived legal barriers: erroneously believing that hiring a person with a disability means legal entanglements.
3. Organizational culture: learned early, much before people with disabilities were ever in society, let alone in the workplace, of the correct way to perceive, think, and feel in relation to workplace situations (Klinger, 2002).

A blind person's values for choosing employment goals may be different from those of other groups because of the limitations placed on the person by the unique disability. Becker (1998) suggests an objective measurement system of assessing values for helping persons who are blind to refine their employment choices and/or their re-employment and job advancement choices. He suggests a rating system for the following measurements of employment empowerment: (a) compensation and benefits package; (b) proximity to family, friends, and community; (c) ethics and respect for human dignity supported by management and owners; (d) self-fulfillment opportunities; (e) physical and emotional safety; (f) sense of belonging; and, (g) opportunities for personal improvement and upward mobility.

Each value would be rated using a five-point score and then multiplied by seven to obtain a score for the potential job under consideration. Becker (1998) refers to this

approach as a managed objective system, one in which the consumer objectively measures his/her values and compares them against a particular job's attributes.

Alternative Skills

Mastery of alternative techniques is the greatest determiner of successful employment outcomes for persons who are blind (Young, 1996). Young reports on qualitative findings from a focus group of eight rehabilitation counselors from seven states, conducted by the Oregon Commission for the Blind. Alternative techniques to reading, writing, and traveling independently were found to be critical to self-esteem and therefore success in employment (Young, 1996). According to Wolffe (1998), employers want skills required for a particular job, and also: (a) a multi-cultured understanding, (b) multiple language skills, (c) computer skills, (d) work experience, (e) evidence of achievements, (f) dependability, and (g) flexibility. DeMario (1992) summarized employer ratings of competencies for successful employment:

1. Good work habits, such as being dependable, completing tasks, and having positive attitudes toward work;
2. Personal-social skills, such as getting along with others;
3. Good communication skills;
4. Basic reading and math skills (DeMario1992).

Experience in either paid or volunteer work is one of the most important steps blind persons can take to promote their careers (Capella-McDonnall, 2005; Irchner & Johnson, 1997; Taheri-Araghi & Hendren, 1994; Wolffe, 1998). According to Miller (2002), skill attainment, confidence, and trust encourage consumers to explore additional goals which will lead to employment. Evaluating the skills necessary for employment,

examining the personal demographics, and the personal capital needed to obtain employment of blind persons in the Rehabilitation Program are as important as evaluating the Rehabilitation Program itself (Kirchner & Johnson, 1997).

Wolffe (2000) offers four necessary skill attainments for those blind persons wishing to facilitate career advancement:

1. Develop an understanding of the CAREER PATHS, become intimately familiar with which knowledge, skills, and work behaviors that desired employment path demands.
2. DEMONSTRATE mature ASSERTIVENESS and positive communication skills.
3. KNOW your particular disability, be able to communicate about it, and be able to function within its limitations.
4. ANTICIPATE employer expectations, which involve knowing the business, the future trends and past cycles. Goal setting and achievement, along with problem solving skills, are crucial to helping the blind person move forward (Wolffe, 2000).

Rehabilitation Technology

Wolffe (2003) reports on a 1999 national survey of 96 private and public rehabilitation agencies with both quantitative and qualitative information to evaluate the status of technology training services in the United States for blind persons. The quantitative results were analyzed with descriptive statistics and inductive data analysis was used to analyze the qualitative data. The 12-item survey is a road map for the issues and trends in the necessary infrastructure for rehabilitation technology:

1. The technology-related services are: (a) individual, (b) general, (c) job-specific skills training; (d) group general or job-specific skills training; (e) technology evaluations; and (f) off-site support.
2. The job titles, duties, and credentials of agency employees who provided AT training.
3. Recruiting and retaining qualified staff.
4. List of products that were used for training or demonstrations.
5. Products in the following categories: (a) screen readers, (b) screen-magnification devices, (c) scanning/reading systems, (d) Braille displays, (e) Braille printers, (f) Braille translation software, (g) closed-circuit televisions, (h) web browsers, and (i) electronic note takers.
6. Training materials used.
7. Percentage of technology-related services that was outsourced.
8. Which services were outsourced.
9. Issues related to outsourcing.
10. Demand for services, and how the demand was managed.
11. Measuring consumer satisfaction.
12. Challenges.

Just as skill acquisition is important so is the recognition of barriers that hinder the process. Interestingly, Wolffe and Spungin (2002) reported on a ten-item survey of seventy-five representatives from both developing and developed countries from around the world and found that the greatest barriers to employment were poverty,

discrimination, the lack of education, resources and necessary technologies, employers' lack of awareness, and inadequate legislative support.

Age, Race, and Gender

Taheri-Araghi and Hendren (1994) evaluated 76 blind consumers of the Rehabilitation Program by examining fourteen independent variables, ten of which were personal variables: (a) education, (b) gender, (c) marital status, (d) number of dependents at the time of referral, (e) race, (f) age at referral, (g) age at onset of blindness, (h) receipt of public assistance, (i) work status at the time of referral, and (j) the presence of other disabling conditions. The remaining four variables were types of services received from the Rehabilitation Program: (a) whether orientation and mobility training were provided, (b) the amount of money spent for a specific case, (c) the distance from the client's home to the rehabilitation center, and (d) the number of changes in career goals. The outcome measure was employment status at the time a case was closed, either successfully or unsuccessfully. The successful closures were: (a) competitive employment, (b) self-employment, (c) home-based employment, (d) sheltered employment, and (e) homemaking. These categories were analyzed individually and collectively. The data analysis revealed the following profile of the consumers' characteristics:

1. Education — categorized by number of years 0–6, 7–12, 13–14, 15–16, and 17–19. The largest category, at 61.7 percent, was 7–12 years of education; the smallest category, at 9.2 percent, was 0–6 years of education.
2. Gender — reported at 52.6 percent male and 47.4 percent female.

3. Marital status — analyzed dichotomously as married or not married. The data analysis revealed that 52.6 percent of the consumers were married and 47.4 percent were not.
4. Number of dependents at the time of referral — 44.7 percent had no dependents, 22.4 percent had one dependent, 18.4 percent had two dependents, and 14.5 percent had three or more dependents.
5. Race — also analyzed as a dichotomous variable, as White 80.3 percent and non-White 19.7 percent.
6. Age at referral — participants ranged from age 15–86 and for analysis the age was broken into eight 10-year age categories; 48.7 percent of the consumers were below age 40.
7. Age at onset of blindness — 52.6 percent of the consumers were blind before age 20.
8. Receipt of public assistance — 27.6 percent of the consumers were receiving some type of public assistance.
9. Work status at the time of referral — 65.8 percent were unemployed and 34.2 percent were homemakers, self-employed, or employed in competitive situations.
10. The presence of other disabling conditions — 34.2 percent had no additional disabling condition, 31.6 percent had one additional disabling condition, and 34.2 percent had two or more other disabling conditions.

A stepwise discriminator analysis of the interaction between the variables revealed that six of the independent variables would classify 60 percent of the consumers

into closure categories. The variables that would indicate a successful outcome were four personal demographic variables:

1. age at the time of referral — middle thirties being the most frequent;
2. gender — male being the most frequent to have a successful outcome;
3. race — White being a stronger indicator; and
4. work status at the time of referral.

Those persons who had a previous work history would be more likely to obtain a successful employment outcome.

Two of the program service independent variables were indicated as having some impact on a successful outcome:

1. amount of case-service money spent (the more spent the greater the likelihood of a successful outcome) and
2. the number of changes in employment goal in the rehabilitation plan, with a higher success rate found in those persons who had fewer changes (Taheri-Araghi & Hendren, 1994).

The authors of the study point out two important limiting factors. First, the homogeneous nature of the 76 participants — they had all acquired blindness adventitiously as a result of retinitis pigmentosa; and, second, the dependant variable of employed as defined included those persons who were placed in non-competitive, segregated, sheltered employment and those persons whose success was measured as living independently. It is not known from this study exactly which variables lead to competitive employment, because of the expansive definition of competitive employment used here. The profile of White, middle thirties, male, has a previous work history, the

Rehabilitation Program spending more rather than less money, and having a focused rehabilitation goal for employment lead to success in the Rehabilitation Program.

Race was indicated as a predictor of successful outcomes in the previous study, meriting a closer inspection. Giesen, Cavanaugh, and Sansing (2004) examined the effect of race on access and entry into the Rehabilitation Program by blind or visually impaired persons. Cross-tabulations of both the National Health Interview Survey Disability Supplement and the RSA-911 allowed percentage distributions of persons with visual impairments by vision status (legally blind, visually impaired), race and ethnicity, gender, and region to determine if visually impaired persons from ethnic and racial groups are accessing the Rehabilitation Program in representative proportions. The cases of 23,346 persons aged 18–65 who were blind or visually impaired during fiscal year 1999 were categorized by (a) White, (b) African American, (c) Native American, (d) Asian or Pacific Islander, (e) unknown (all non-Hispanic), and (f) Hispanic of any race. Both sources of data were based on large numbers of cases and derived percentages were reported in a descriptive fashion. Differences in percentages were evaluated in terms of the effected sizes.

Selected differences in percentages between the NHIS-D and the RSA-911 data were tested for statistical reliability (significance). Using a z-test for the difference between proportions indicated that the percentage of Whites with access to VR (RSA-911 data) was seven percent lower than the percentage of legally blind. Thus, the statistics of the White population in the national population shows (NHIS-D) $z = 2.93$, $p = .0034$. This difference indicated a lower representation of persons who were legally blind and White accessing the Rehabilitation Program. For legally blind African Americans, access

was nine percent higher than the percentage of legally blind African Americans in the national population ($z = 4.26, p = .00002$), indicating a relatively higher representation of legally blind African Americans who accessed the Rehabilitation Program (Giesen, Cavanaugh, & Sansing, 2004). The authors proposed four likely contributing factors to the representatively higher access rate for African Americans:

1. The well-known higher prevalence rate of blindness among African Americans;
2. Concerted efforts by State Rehabilitation Programs, as revealed by State rehabilitation plans to implement outreach strategies to minorities;
3. Pre-existing socioeconomic disadvantages caused the higher representation of minorities in the Rehabilitation Program. To substantiate the latter conclusions, the authors returned to the data from the National Health Interview Survey and examined income and employment indicators and found that visually impaired persons' income was less than \$20,000 for 72 percent of African Americans, 60 percent of Hispanic Americans, and 44 percent of Whites. This data was compared to 42 percent, 41 percent, and 19 percent for persons with no visual impairment.
4. Of those visually impaired and currently employed, data shows thirty percent of African Americans, forty-two percent of Hispanic Americans, and fifty percent of Whites. Statistics for employment with no visual impairment show sixty-nine percent, and seventy-eight percent, respectively.

Also, the data which indicates that seventy percent of African American who are visually impaired is both unemployed and live below \$20,000 would support the author's hypothesis that the "higher representation" of African Americans in the Rehabilitation Program could be explained in part by socioeconomic factors.

Warren, Cavanaugh, and Giesen (2004) investigated the racial differences in employment outcomes for legally blind consumers, and for differences in employment outcomes when controlling for: (a) education, (b) presence of secondary disability, (c) age, (d) source of support, (e) gender, and (f) marital status. The authors in this study defined an employment outcome as a dichotomous variable, as either competitively employed or homemaker. Note: Homemaker was used as the dependant variable. As well, 10,736 cases representing blind persons whose cases were closed as a successful employment in 2001 fiscal year were used as the population data set from the RSA-911 reporting system. Logistic regression procedure was used to create reference and indicator variables. The independent variables were: (a) race, classified into four indicator variables, (b) marital status with four indicators also, (c) secondary disability, represented as a dichotomous variable, (d) support at application, also coded as a dichotomous variable, (e) age at application, in years, (f) gender, and (g) education.

Using logistic regression to control for the known independent predictor variables, and analyzing the one remaining variable of race against the dependant variable of homemaker outcome generated a significance level at the P .001 level, indicating that race was a significant predictor variable. The authors found no significant racial differences in the employment outcome of homemaker for legally blind persons (Warren, Cavanaugh, & Giesen, 2004). This study limited the definition of an

employment outcome as being that of a homemaker and did not expand the study to remaining categorical outcome measurements of the Rehabilitation Program.

Cavanaugh and Rogers (2002) examined demographic and program service data on 8,676 persons who were blind or visually impaired and at least age fifty-five and who had achieved an employment outcome of either competitive or non-competitive in 1998, to determine a consumer demographic profile that would be helpful for predicting successful employment outcomes. Predictor variables were taken from the RSA-911 form and were: (a) age, (b) race, (c) gender, (d) education, (e) severity of vision loss, (f) presence of a secondary disability, (g) onset of vision loss, (h) the primary source of support, (i) previous employment, (j) marital status, and (k) services received. Eight variables were found to be significant positive predictors of a competitive employment outcome: (a) monetary self-support at application, (b) younger age, (c) higher cost of services, (d) having more vision, (e) having previously worked, (f) being male, (g) shorter duration of services, and (h) having no secondary disability. The stepwise multiple regression analysis was set at the .05 significance level and regression analysis identified the eight variables as explaining 41 percent of the variance in competitive-sector employment (Cavanaugh & Rogers, 2002).

This study was limited to those persons over age fifty-five and the authors found that approximately twenty five percent of those persons achieved a successful competitive employment outcome. The study also revealed that gender, younger rather than older, more case service money spent on a case, having a previous work history, and not having any secondary disabling conditions was a profile that could represent blind persons who were over age 55 and seeking employment.

Comparative Variables

Schmidt-Davis, Hayward, and Harold (2000) examined several questions using data from the Longitudinal Study of the Vocational Rehabilitation Services Program, sponsored by the Rehabilitation Services Administration. These questions were: What are the basic skills necessary for anyone with any type of disability, not just blindness, to enter the workforce? What is the impact on earning potential, defined by the authors as \$9.00 per hour for a living wage? What can the Rehabilitation Program do to influence the basic skills?

Persons accessing a Rehabilitation Program and achieving an employment outcome were measured with the dependant variable of earnings at closure. The authors categorized earnings into: (a) less than or equal to \$5, (b) \$5.01–\$7.00, (c) \$7.01–\$9.00, and (d) greater than \$9.00. More than 8,000 cases of persons with the following disabilities were examined: (a) mental illness, (b) mental retardation, (c) learning disability, (d) physical disability, (e) sensory disability, and (f) other disability.

The authors conducted three sets of descriptive analyses: First, a regression analysis that predicts earning levels from demographic variables and type and significance of disability by educational status, which was measured by grade level in reading and math, and number of years of education consumers have completed when entering the Rehabilitation Program and their average earnings. Second, results from relationship of demographic, disability, attitudinal, and educational factors to hourly earnings; the dependant variable of hourly earnings was categorized as four levels. Finally, correlational analysis of selected factors was performed, and then a regression analysis that predicts earnings levels from educational demographics was also used to

further demonstrate the value of the variables. The authors found significance for all tests at the .05 level.

The demographic variables and results are as followed:

1. Race — Whites earn more and have higher levels of education than minorities.
2. Age — the older the person, the more earnings and the higher the educational levels are.
3. Gender — men earn more but have lower basic educational skills.
4. The receipt of public benefits — those who receive public support have lower scores in math and reading but the same number of years of education as those who do not receive public support; however, their earnings level is lower.
5. Type of disability — not surprisingly, the more severe the disability, the less educational obtainment and the less earnings.
6. Onset of disability — the findings are surprising when looking at onset of disability. Those persons who were congenitally disabled had lower math and reading skills, fewer years of education, and fewer earnings than those persons who acquired their disability later.
7. Educational levels — not surprisingly, the more education one has, the more money one earns. There is a two-year educational gap between those making at least \$9.00 and those making \$5.00 per hour. Additionally, math levels were three years higher for those earning the living wage and correspondingly reading levels were higher in relation to earnings.

While not groundbreaking findings, the authors do point out needed programmatic observations for the Rehabilitation Program, a return to assessing and remediating basic educational skills (Schmidt-Davis, Hayward, & Harold, 2000). Houtenville (2003) conducted an economic comparison of persons who were age twenty-five to sixty-one and had all disabilities, using data from the National Health Interview Survey of those persons being blind in both eyes as compared to the economic status of those who reported other visual impairments and the economic status of those who reported some other disabilities: (a) deaf in both ears, (b) other hearing impairment, (c) mental retardation, (d) paraplegia, (e) hemiplegia, (f) quadriplegia, and (g) cerebral palsy.

Data were collected by survey responses from 1983 until 1996 and was categorized into two subgroups, one being gender and the second being disability. Two measures of outcome were used as the dependant variable: income and employment. The author reports significance at the 90, 95, and 99 percent levels when comparing different groups to the dependant variables. The results demonstrate a lower economic and employment picture for those persons who are blind. The author found that the employment rate amongst men who had no impairment was 88.8 percent versus 49.4 percent of those men who were blind. For women the rate is much more drastic, at almost three times the working rate: approximately 68 percent of women who were not blind were employed as compared to only 23 percent of blind women. Also, men who had visual impairments were working at a rate much higher than those men who are blind (82.3 percent) or 1.67 times as likely to be working; likewise, for visually impaired women the rate was 36 percent, 1.6 times that for women who were blind.

The employment rate of men who reported cerebral palsy (58.3 percent) was also higher than that of men who reported being blind in both eyes; for women with cerebral palsy, the rate was 32 percent or 1.4 times more likely to be working than women who were blind. Among men and women with disabilities, only those who reported paraplegia, hemiplegia, or quadriplegia and those who reported mental retardation had a significantly lower employment rate than did persons who were blind. Not surprisingly, the income levels for both men and women followed the same patterns as did the employment rates. Also, not surprisingly, the rate of social security disability-related income for persons who were blind was much higher than for those persons having no disability, or higher than all other disability groups except for those persons who have mental retardation and those people with severe physical disabilities. Women who are blind have a 10 percent higher rate of receiving disability payments; however, only women having mental retardation receive disability-related cash benefits at a higher rate.

Self-Employment

Self-employment, other than being employed in a Business Enterprise Program (BEP), is a part of the successful employment outcomes from the Rehabilitation Program (P.L. 105-220). Amendments to the 1998 Rehabilitation Act authorize technical assistance and other consultation services to conduct market analyses, develop business plans, and otherwise provide resources to eligible individuals who are pursuing self-employment, telecommuting, or establishing small businesses as employment outcomes (Section 103 [13] of P. L. 105-220).

Moore and Cavanaugh (2003) see this closure outcome choice as both a viable one and one that is underutilized and misunderstood. Using RSA-911 Case Service

Reports for fiscal years (FYs) 1994–99 and RSA-15 data for FYs 1994–2001 from RSA’s comprehensive management information system, Moore and Cavanaugh (2003) summarized data of self-employment closures for blind persons. For consumers who are blind and received an employment outcome under the Rehabilitation Program during fiscal years 1994–1999, approximately five percent, and as high as six percent, of the blind persons nationwide achieved a self-employment outcome. Moore and Cavanaugh (2003) found that the cost of self-employment outcomes was approximately \$1,600 less than the mean cost of competitive outcomes and \$4,700 less than the mean cost of BEP outcomes. The authors also found that persons achieving a self-employment placement would most likely be in professional, technical, and managerial occupations rather than processing jobs (Moore & Cavanaugh, 2003). The authors warn against Rehabilitation Program administrators allowing policy and practices to slow down a person’s choice for a self-employment outcome, partially because of the average lower cost to the Rehabilitation Program and partially because of the increasing limited opportunities in the Business Enterprise Program (Moore & Cavanaugh, 2003).

The longest and most familiar self-employment program for blind people in America is the program created by the Randolph-Sheppard Act of 1936 (20 U.S.C. Section 107 et seq.), which established the Randolph-Sheppard Vending Facility, commonly known as the Business Enterprise Program. This self-employment program provides blind persons with employment and self-support through the operation of vending facilities on properties (Moore, 2005). The BEP is best described as a service-oriented vocational Rehabilitation Program that can be measured by its ability to maximize profits and to generate sustainable self-employment for persons who are blind

(Schaefer & Moore, 2002). The BEP is a unique combination of a business enterprise and a vocational Rehabilitation Program with the business component being managed by a blind person who is licensed by the Rehabilitation Program (Moore, 2005).

To combat losses in the BEP program, Schaefer and Moore (2002) outline six approaches for the Rehabilitation Program to utilize that would help increase and strengthen employment opportunities for blind people:

1. Expand facilities along the U.S. Department of Transportation's interstate highway network.
2. Conduct market analysis of potential customers in office buildings.
3. Expand product offerings in vending machines and over-the-counter snack bars to include vegetarian and low-fat items.
4. Develop a formal process of evaluating and accepting new locations.
5. Integrate BEP staff counselors into the decision-making process of evaluating business locations.
6. Include blind BEP facility managers in the staff development programs of the rehabilitation agency.

According to Ipsen, Arnold, and Colling (2005), available data indicate that the rate of persons with a disability employed in self-employment is slightly more than that of persons without a disability 12.2 percent versus ten percent, and that self-employment is compatible with particular needs, providing:

1. flexible work hours that allow for health care demands;
2. economic independence;
3. allowing the person to remain close to an established support network; and

4. the elimination of environmental barriers, such as building access and transportation.

Following the 1998 Amendments to the Rehabilitation Act, State Rehabilitation Programs modified their policies to assist self-employment as an employment outcome. However, there appears to be a disconnect between and State policy change and Rehabilitation Program outcomes to self-employment, with less than three percent of employment outcomes being those of self-employment for the past ten years (Ipsen, Arnold, & Colling, 2005). Ipsen, Arnold, and Colling (2005) suggest many factors that explain the lack of growth in self-employment:

1. Rehabilitation counselors lack the capacity to support individuals in self-employment.
2. Rehabilitation counselors lack training in small business development.
3. Rehabilitation counselors lack intricate knowledge of business development, including: (a) licensing, (b) regulations, (c) permits, (d) business insurance, (e) corporate status, (f) capital equipment, (g) safety regulations, and (h) production methods.

Ipsen, Arnold, and Colling (2005) administered a survey that examined the (a) linkage role between the Rehabilitation Program and external agencies, (b) referrals between the agencies, and (c) formalized agreements between the agencies. They suggest that one approach to addressing the intricacies of self-employment is to link with agencies external to the Rehabilitation Program. One such linkage is the 1100 Small Business Development Center Network, (SBDC) created by the Small Business Administration to provide training and counseling in the development of small

businesses. Just as the Rehabilitation Program is charged with providing self-employment to people who are disabled, so too is the small business network; a sharing of expertise and collaboration could positively impact outcomes to self-employment for people with disabilities (Ipsen, Arnold, & Colling, 2005). To quantify and further expand the knowledge, Ipsen, Arnold, and Colling (2005) developed a linkage survey to determine the formal connections between the Rehabilitation Program and the Small Business Development Centers. They distributed 571 surveys to small development centers and sixty-four percent were returned, representing forty-nine states. Descriptive statistics were used to analyze all of the responses and between-group comparisons were evaluated at a two-tailed significance alpha level of .05, using independent samples, tests, and chi-square tests.

Linkage and coordination were quantified by using a four-point Likert-type scale, on which 1 = not important and 4 = extremely important. Responses indicated the following:

1. 90 percent of total respondents indicated that understanding of SBDC and Rehabilitation Program roles is important or extremely important to coordinated efforts.
2. 92.5 percent of respondents felt that it is important for the Rehabilitation Program to assist with disability issues, allowing SBDCs to focus on issues of business.
3. 94 percent felt that it is important that consumers of the Rehabilitation Program be provided with information about the SBDC program.

Respondents (33.8 percent) said that the number of Rehabilitation Program referrals to the SBDC had increased over the past three years. A majority (56.6 percent) of participants said that their SBDCs routinely referred clients who have disabilities to the Rehabilitation Program. Approximately 8.2 persons per year were referred to SBDC from the Rehabilitation Program. Only 15.2 percent of SBDCs reported that no consumers had been referred to them by the Rehabilitation Program.

Program Evaluation

Given that the employment rate for persons who are blind is found to be unacceptably low, administrators, policy makers, and others often turn a critical eye to rehabilitation practitioners, the professionals who are employed to find persons who are blind and help them obtain jobs (Crudden, Sansing, & Butler, 2005). Therefore, it is right to evaluate the Rehabilitation Program. To be most efficient in evaluating the effectiveness of the services of a VR program, it is helpful to examine outcome efficiency models. Borrowing from traditional labor market measurement tools, Gibbs (1991) applies a model of evaluating the VR program. Given that the traditional measure of success of the VR program is competitive labor market placement, Gibbs identifies three labor market outcomes which can be used to evaluate services:

1. The effect is a change in earnings, conditional on employment after closure from the Rehabilitation Program.
2. There is a change in the employment probability.
3. There is a change in the expected length of periods of employment.

The employment outcomes expectation of the consumer of the services can be summarized as the probability of being employed and the duration of periods of employment (Gibbs, 1991).

Gibbs's model for evaluating the VR program uses analytical tools developed by researchers in the biomedical sciences and engineering fields. The model is titled Survival Analysis, and has two main components of measurement: survival functions and hazard rate. Survival function is the probability that the person remains employed longer than an expected period. The hazard rate is a conditional expectation that a person terminates employment in a short time (Gibbs, 1991).

Gibbs suggests that the use of parametric models for determining survival rate and hazard rate are best suited for evaluating the Rehabilitation Program. Using a multivariate analysis allows for measuring variables which influence the duration of employment and allows one to specify a likelihood function and to assume that survival times follow a family of distributions (Gibbs, 1991). In the following study, however, a non-parametric procedure using the hazard rate model was used to conduct a study of 2,536 participants who obtained a successful employment outcome in 1982, all participants of the Rehabilitation Program in Virginia. Those cases were compared against 267 cases that did not receive rehabilitation services.

Individuals were categorized into three disabling conditions: (a) physical, (b) emotional, and (c) mental. Individuals were also stratified by (a) age, (b) education, (c) race, and (d) gender. Periods of employment and unemployment were used as the dependant variable, with the specific analysis of the relation between participation in the Rehabilitation Program and the duration of periods of employment, and the relation of

Rehabilitation Program services to duration of unemployment being examined. Using a chi-square value for the chosen significance level, to define a significant difference between the two groups, revealed that receipt of rehabilitation services is associated with an increase in the median duration of employment. However, recipients of rehabilitation services did experience periods of unemployment: fifteen percent of recipients were unemployed by the end of the first three months and never returned to work, and only fifteen percent of the recipients never experienced a period of unemployment during the fifty-one-month observation. The comparison univariate analysis using the hazard rate model suggested longer periods of employment and shorter periods of unemployment in relation to the receipt of vocational rehabilitation services (Gibbs, 1990).

Using a pre- and post-treatment model to measure the effect of receipt of services from the Rehabilitation Program, Gibbs used a comparison group that included persons who were accepted for rehabilitation services but were terminated from the program before any services were provided, or before any treatment was applied. These people had similar demographic variables to those who did receive services or treatment from the Rehabilitation Program. However, the comparison group may not be ideal for comparing because possible key elements are missing from the group. A possible explanation for services never being provided would be unwillingness on the part of the participant to work, or the participant's ability to find work without the services from the program (Gibbs, 1990). The measurement of periods of employment versus periods of unemployment against the receipt of rehabilitation services is just one measure of the effectiveness of the program (Gibbs, 1991). However, to have a complete picture of the program, other models must be applied.

Many centers of rehabilitation conduct training programs designed to provide necessary skills and acquisition of skills for a trade area to help a blind person become employed in specific vocational trades. These programs are largely unsuccessful in meeting their goals of employment. Beadles et al. (2000) conducted an outcomes study of a training center in Alabama. That center was an adult vocational training facility which had a system of special services and programs to assist persons who are blind to train for and locate jobs. The study examined 80 graduates of the center's programs, examining their current employment status and the type of training received from the center. Using chi-square to compare the vocational programs with the consumer characters, the study found that 61 percent of the graduates of the center's program were unemployed. From this study the following suggestions are offered to assist Rehabilitation Programs:

1. more research of a longitudinal design needs to be conducted as part of evaluations of vocational programs;
2. more detailed feedback from consumers needs to be part of the evaluative process in the form of exit and follow-up interviews; and
3. rehabilitation professionals may be well advised to consider the results of data-driven studies of vocational training programs before they place students in specific vocational programs, especially those in which the data show a significant proportion of graduates who were unemployed (Beadles et al., 2000).

A study conducted by Capella-McDonnall (2005) demonstrates more evaluative information for the Rehabilitation Program, examining which variables are associated with successful employment outcomes for blind consumers. The study used public data

obtained from the longitudinal study of the Vocational Rehabilitation Services Program. The study examined 181 cases of blind persons to determine what factors would lead to a successful employment outcome, with success defined as working in competitive employment, self-employment, or supported employment or with the Business Enterprise Program (Capella-McDonnall, 2005). The independent variables used by the authors were: (a) gender, (b) age, (c) level of vision loss, (d) presence of a secondary disability, (e) receipt of financial assistance, (f) race, (g) educational level, (h) previous work history, (i) relationship with counselor, (j) educational services, and (k) interest in gaining employment as an outcome.

Employing the multivariate technique of logistic regression identified the most significant variables (at the significance level of $p < .01$); the variables that led to employment outcomes were (a) receiving education leading to a certificate or degree, (b) having worked since the onset of the disability, (c) being motivated to apply for vocational rehabilitation related to obtaining a job, and (d) viewing the relationship between the counselor and the consumer as high quality (Capella-McDonnall, 2005). Not surprisingly, the relationship of the consumer to the counselor is of significant value to the overall success of the consumer's Rehabilitation Program.

Further research on the benefit of obtaining an education was conducted by Emener and Marion-Landais (1995), who used a 50-item survey over a 12-month period to study 41 blind persons who had completed college and had obtained an employment outcome from the Florida Rehabilitation Program during the years 1988–1992. This study reported that attending college was very beneficial in terms of employment, ability to live independently in the community, and overall quality of life. It was, not surprisingly,

concluded that there are numerous benefits for an agency serving blind and visually impaired individuals to selectively send their consumers to college (Emener & Marion-Landais, 1995).

The study also included evaluative information for the Rehabilitation Program, responses indicating a need for more assistive technology while studying in college, better communication with their rehabilitation counselors, and a strong indication that more assistance is needed from the Rehabilitation Program in the area of job searching and acquisition (Emener & Marion-Landais, 1995). Again, this demonstrates the Rehabilitation Program's need to communicate with and be involved with the consumer as a key element for success.

Factors other than the Rehabilitation Program's behavior have an impact on employment, as demonstrated by Farish and Moore (1989) in a study of 116 blind persons who received rehabilitation services. The researchers examined the outcomes of the subjects who all received monthly cash benefits from Social Security with in-take variables: (a) age, (b) highest grade of schooling completed, (c) marital status, (d) major disabling condition, and (e) monthly family income. By applying a multiple regression analysis on the independent variables the researchers found that among those students who were receiving cash benefits from Social Security and obtained a successful outcome from the Rehabilitation Program were blind persons who (a) were more likely to be older, (b) were better educated, (c) required more money to be spent on case services, (d) received a higher number of services, and (e) spent less time on agency rolls (Farish & Moore, 1998).

Summary

The Rehabilitation Program grew from a state-assisted and private-agency-assisted program to become a nationally funded program to assist persons with disabilities obtain employment. The Rehabilitation Program would grow in its fiscal allocation, and professional development of human capital, focused in an effort to better serve the consumer. Educational programs at the college level and post-graduate level, expansive rights and protection would also grow in the program. Consumers would find their position in the program grow from one of passive recipient to one of active participant. Employment options and program services greatly expanded from those of the early years of rehabilitation. Persons with such severe disabilities as blindness and mental disabilities would be added to the legal protection of the Rehabilitation Act. The option of having services to assist in supportive employment and self-employment were added to the Act, and anti-discrimination statutes were included to help person's combat discrimination in the work place.

The consumer of rehabilitation developed alongside the system — as the system redesigned itself with each legislative reauthorization, the consumer became increasingly involved in legislative advocacy to shape the Rehabilitation Program. The development of the consumer in legislative sophistication was driven by social forces of normalization, self-directed control, consumer-directed services, and self-empowerment. These social forces are all elements of a developing philosophy of the person with a disability who has become a participating contributor to society and who understands that handouts have been replaced by seeking a competitive place in society.

The philosophical development of the consumer brought about regulatory changes in the Act, such as the Individual Plan for Employment, Informed Choice, and Active Participation. These changes have the common theme and practical application of making the consumer an equal partner in shaping his/her employment service plan, directing services, and being fully responsible and accountable for program outcomes. The philosophy of self-determination fueled all of the social forces of self-advocacy, consumer-directed services, and self-empowerment. Self-determination has taught the individual with a disability to enhance his/her image, both public and self-image, to enhance competency for competition.

Researchers in rehabilitation literature have identified a variety of work skills and demographic factors that correlate with a person who is blind, or disabled, obtaining competitive employment in the integrated labor market. However, researchers continue to find that persons with disabilities remain shamefully unemployed at a rate of 67 percent (Klinger, 2002), and unemployment for persons who are blind continues to remain in the 70-percent range (Moore, 2003; Wolffe, 2000).

Corporations continue to ignore persons with disabilities as a pool of human capital to be tapped, even during record levels of low unemployment (Klinger, 2002). The research suggests that it is outdated, stereotypical views of persons with disabilities, old-fashioned corporate cultures, and misinformation about perceived legal entrapments that keep the larger corporate world hesitant to hire people with disabilities. Investing in skills to improve competency and image and employing values that build upon a person's human capital are identified as the core factors that will lead to a blind person becoming competitively employed.

Alternative techniques have been identified by the research as being one of the most valuable, if not the most important, skill that a person can obtain (Young, 1996). Alternative techniques teach the blind or disabled person to problem-solve and to increase their confidence and self-image with each problem that is solved. The basic skills that were identified by the research were reading, writing, and traveling independently. Skills that employers identified as being desirable included (a) having the ability to know and understand one's disability; (b) being articulate about one's disability; (c) having a multi-cultural understanding; (d) language skills, (e) computer skills; and (f) work experience (Wolffe, 1998).

Rehabilitation technology is provided as a service within the Rehabilitation Act and was found by the researchers to be a key factor in leading to competitive employment. The importance to the consumer of acquiring technology-related services, job-specific skills training, technology evaluations, and off-site support were all found to be vital for competitive employment (Wolffe, 2003). Additional variables that impact successful outcomes were identified by the researchers as (a) age at the time of referral — middle thirties being the most frequent; (b) gender — male being the more frequent in a successful outcome; (c) race — White being a stronger indicator; and (d) work status at the time of referral. Persons who had a previous work history would be more likely to obtain a successful employment outcome. The program factors that consistently indicated positive employment outcomes were those of allowing the exploration of many employment goals and cases with liberal spending on services.

The research has offered considerable program evaluation material to assist Rehabilitation Programs in becoming better stewards of the public resources allocated to

help persons with disabilities become competitively employed. There needs to be more evaluative research on vocational programs of a longitudinal design. More attention needs to be focused on the results of the data when designing Rehabilitation Programs. More detailed feedback from consumers has also been identified as key to evaluating the Rehabilitation Program (Beadles et al., 2000).

In their evaluation of the Rehabilitation Programs researchers also found a need for more assistive technology for blind consumers while studying in college, better communication with their rehabilitation counselors, and a need for more assistance from the Rehabilitation Program in the area of job searching and acquisition (Emener & Marion-Landais, 1995). The recurring theme in the research demonstrates the Rehabilitation Program's need to communicate with and be involved with the consumer as a key element for success. Further elements of success, identified by the researchers as not being practiced often enough by the Rehabilitation Program, were:

1. Communication with employers;
2. The access to and use of employment-related data by both staff and consumers;
3. Focusing on the need for job-ready consumers to have the skills to compete in the labor market
4. Staff attention to the fundamental purpose of rehabilitation —jobs — in the areas of (a) job placement, (b) transition from school to work, (c) job retention, and (d) job advancement; and
5. Utilizing successful blind persons as resources. (Kirchner & Johnson, 1997)

Further program evaluation research revealed that the Rehabilitation Program should pay attention to consumers' goals, not be hesitant about providing services, and encourage those services that help the consumer live independently (Raudenbush, 2003).

Finally, program evaluation research recommended that the Rehabilitation Program: (a) train consumers in assertiveness skills, (b) teach hiring managers interaction skills with blind people, (c) share information about accommodations used by blind people with employers to enhance the possibility of employment, and (d) use experienced employers as mentors for those employers who have never hired blind people before (Wolffe & Candela, 2002). Perhaps one observation from research can be used to summarize why the Rehabilitation Program has been unable to lower unemployment for blind and disabled persons: it is that the Rehabilitation Program remains geared to a protective environment as opposed to helping persons acquire transferable and competitive skills for a rapidly changing technological marketplace (Nagle, 2001).

III. METHODOLOGY

This chapter focuses on the research methodology and is directed to the research questions that address factors that correlate with employment for people who are blind. The research questions, with a description of both assigned independent and dependent variables, are defined. A description of the data and the subjects that they represent, along with the collection methods, are also detailed. Finally the description of the analytical method to be used in examining the data and answering the research questions are explained.

Research Questions

This project is a retrospective non-experimental analysis of four years of data reported by the Rehabilitation Services Administration, an office within the United States Department of Education, and is built upon four research questions.

Research Question 1 asked, “What is the relationship between selected demographic factors to the employment status achieved by a consumer upon exiting?” The dependent variable for the purposes of this question, and for question two, is a dichotomous variable of “employment status” categorized as either competitive versus non-competitive employment upon exiting the rehabilitation program. The dependent variable data are reported with a one-digit code on the RSA-911 data reporting system;

this indicates whether an individual achieved competitive employment or non-competitive employment at the time the service record was closed. The dependent variable of employment status is measured by four different categories for competitive employment and in three categories for non-competitive employment. Competitive employment is in an integrated setting, self-employment, or a state-managed Business Enterprise Program; it is performed on a full-time or part-time basis for which an individual is compensated at or above the minimum wage.

Specifically, a person with a disability who completed eligibility and was qualified for services under the Rehabilitation Act chooses the employment goal and subsequent outcome. The program offers seven choices that define employment status and determine whether a case record will be exited as competitively or non-competitively employed. The outcome choices are presented in Table 1.

Table 1

Definitions of Employment Status

Employment Outcome	Description
<i>Competitive</i>	
<ul style="list-style-type: none"> • Employment without Supports in Integrated Setting 	Employment in an integrated setting without support services. Work performed for wages, salary, commissions, tips, or piece-rates
<ul style="list-style-type: none"> • Self-employment 	Work for profit or fees, including operating one's own business, farm, shop, or office.
<ul style="list-style-type: none"> • State Agency-managed Business Enterprise Program 	Vending facilities that operate under the Randolph-Sheppard Act, and other small businesses operated by individuals with significant disabilities under the management and supervision of a State VR agency.
<ul style="list-style-type: none"> • Employment with Supports in Integrated Setting 	With ongoing support services for individuals with significant disabilities.
<i>Non-Competitive</i>	
Extended Employment	Work for wages or salary in a non-integrated setting for a public or nonprofit organization.

(table continues)

Table 1 (continued)

Employment Outcome	Description
Homemakers	Keeping house for others in their households or for themselves if they live alone.
Unpaid Family Workers	Work without pay on a family farm or in a family business.

The independent variables for question one are selected demographic variables that have been previously identified in research as having significant influence on employment outcomes.

Table 2

Demographic Variables

Variable	Literature References
Race	Warren, Cavanaugh & Giesen, 2004; Cesen, Cavanaugh & Sansing, 2004; Schmidt-Davis, 2000; Hayward & Harold, 2000.
Age at Application	Cavanaugh & Rogers, 2002; Schmidt-Davis, 2000; Hayward & Harold, 2000; Taheri-Araghi & Hendren, 1994.

(table continues)

Table 2 (continued)

Variable	Literature References
Employment Status at Application	Cavanaugh & Rogers, 2002; Taheri-Araghi & Hendren, 1994.
Gender	Cavanaugh & Rogers, 2002.
Weekly Earnings at Application	
Education Level at Application	Schmidt-Davis, Hayward, & Harold, 2000.
Onset of disability	

Race is coded in the data set as two categories labeled as White and non-White. Originally race was represented in the RSA-911 data set as six choices. The data set for this study revealed that only 1.3% of the cases were other than White or Black. Weekly earnings at application and employment status both measure works at the time a person applied for services. The data display reported earnings in a four digit continuous variable and employment status at application is is represented as a dichotomous measure of a person being employed or not employed competitive at the time of application. Education at application is measured using categorical variables of: less than high school, high school graduate and some post-secondary education. Education was originally represented the RSA-911 data set as a nine categorical variable, ranging from noo formal schooling to post-graduate degree.

Research Question 2 asked, “What is the relationship between selected program services and employment status of a consumer achieves upon exiting?” The independent

variables of program services are those that are provided under the Rehabilitation Act and are provided to an individual for determining eligibility and/or developing and carrying out the IPE. Services for assessment and for carrying out the IPE may have been provided by the rehabilitation agency itself or by any variety of public or private entities agreed upon by the consumer and the rehabilitation program. The following table shows the 11 program services that represent the independent variables for this analysis. Complete lists of all 22 program services provided by the Rehabilitation Act appear in Appendix A. Each service is coded in the RSA-911 data set with a two digit code and appears in data positions 110-153. The first digit in the two digit code represents the provider of the service and the second digit represents the funder of the service.

A correlation matrix will be used to examine the correlations between the independent variables and to locate where the greatest problems of overlap between the variables. Eleven selected program service variables will be used in this study (see Table 3).

Table 3

Correlations Matrix of Variables Showing Overlap

Program Service Variables	Previous Research	Explanation
(a) Disability Related Augmentative Skills Training	Wolfe, 2003; Young, 1996.	Skills for employment for a blind person, alternative techniques to read, write, and travel.
(b) On-the-Job Training	Capella-McDonnall, 2005; Kirchner & Johnson, 1997; Taheri-Araghi & Hendren, 1994; Wolffe, 1998.	Experience on the job is one of the most important steps blind persons can take to obtaining an employment outcome.
(c) Rehabilitation Technology	Wolfe, 2003, 2004.	Technology use and skill development are crucial for employment outcomes for a blind person.
(d) Academic Training, Leading to a Degree	Capella-McDonnall, 2005; Emener & Marion-Landais, 1995.	

(table continues)

Table 3 (continued)

Program Services	Previous Research	Explanation
(e) Occupational/ Vocational Training		
(f) Job readiness Training		
(g) Miscellaneous services		
(h) Job search training		
(i) Job placement assistance		
(j) On-the-job Supports		
(k) Other services		

Research Question 3 asked, “What is the relationship between selected program services and the amount of income a consumer earned upon exiting?” The dependant variable of income is measured by weekly earnings data, captured after a person has been working on a job for 90 days.

Research Question 4 was “What is the relationship of selected demographic factors to the amount of income earned by a consumer upon exiting?”

Description of Data

Data used for this research project were obtained using the RSA Data-use Agreement Form to extract data from National Case Service Report (RSA-911), obtained from RSA, U.S. Department of Education, for the Fiscal Years 2002, 2003, 2004, and 2005. The RSA-911 data base is population data on all cases closed nationwide in the Federal and states vocational rehabilitation system in a given fiscal year. Each RSA-911 case record captures demographic, socio-economic and disability information at referral; information on all types of services received; and outcome information on cases closed during the fiscal year. All RSA-911 FY 2002–2005 complete case records for consumers served in the State of Alabama (N = 1,328), who were legally blind and whose cases were closed, were analyzed. For a detailed description of the data see Appendix D.

Data Analysis

Each research question will be answered using multiple regression. Multiple regressions (MR), as an analytical method, can be used to analyze a variety of research questions and has become a common strategy in rehabilitation research (Chan, Rosenthal, 2006). MR is used in rehabilitation research to make predictions using multiple independent variables, and to establish that a set of independent variables explains a proportion of the variance in a dependent variable, as well as the relative predictive value of the independent variables (Chan & Rosenthal, 2006).

The fundamental application of MR is the simultaneous use of independent variables to predict effect on the dependent variable which provides information about variance in the dependent variable caused by the independent variable (Hoyt, Leierer, &

Millington, 2006). Hoyt, Leierer and Millington (2006) identify three models for MR which are distinguished by how the independent variables are selected for the regression equation: simultaneously, hierarchically order predetermined by the investigator, or empirically determined by which variables contribute to prediction (Hoyt, Leierer, & Millington, 2006)

In order to answer Questions 1 and 2, logistic regression using *SPSS* Version 16 was employed to determine relationships between the independent and the categorical dependent variables. Questions 3 and 4 will be answered using multiple regressions to define relationships between the independent variables and the continuous dependent variable.

Logistic regression (LR) was selected for the analyses for questions one and two, because the criterion (variable employment status) was dichotomous, and LR is preferred in this context (Hair, Anderson, Tatham, & Black, 1998). Logistic regression, as a multivariate technique, allows for the evaluation of each independent variable's impact on a successful employment outcome while holding the other variables in the model constant. By evaluating the significance of each independent variable in the model, one knows whether a particular variable has a significant impact on the dependent variable when the other variables in the model are controlled. Specifically, a backward elimination approach will be used to first generate a model, based on using all independent variables, called the full model. This process will also generate alternative models, with the intent on restricting the final model to those independent variables that are statistically significant ($p < .05$). This procedure will be applied to each group of independent variables: demographics in RQ 1 and program services in RQ 2.

Multiple linear regression (MR) was used to analyze questions 3 and 4 because the dependent variable of income is a continuous variable. A backward elimination approach will be also be used to address research questions 3 and 4. As a result, a full model will be generated using all demographic variables for RQ3 and all program services variables for RQ4. Restricted models will also be generated, limited to those demographic and program service variables that contribute in a statistically significant manner.

Summary

Four questions are proposed to measure relationships between selected demographic and programmatic variables in an effort to highlight key factors that may correlate with employment status for people who are legally blind upon exiting their rehabilitation programs. The data that is being used to answer the questions has been collected from the Rehabilitation Program and will be analyzed with logistic and multiple regression techniques.

IV. RESULTS

This non-experimental retrospective study examined case records from the state of Alabama's Vocational Rehabilitation Agency's competitive closure rates for blind consumers to determine the relationships of numerous variables to program outcomes and to identify the quality of jobs obtained. Four questions were analyzed. Two of them, Questions 1 and 3, measured selected assigned demographic features of the consumer, while the other two, Questions 2 and 4, measured selected program services received by the consumer. Questions 1 and 2 queried to find a relationship with competitive versus non-competitive closure status, and Questions 3 and 4 queried to find a relationship to weekly earnings at closure.

Descriptive Data

Table 4, Demographic Characteristics by Employment Status at Closure, shows seven demographic results of all 1,328 cases in the data set. Table 5, Program Services by Employment Status at Closure, Gender and Race, reports percentage and total numbers distributed by race and gender. Table 4 also shows the Employment Status at Closure, which indicates that a case record was closed as competitive or non-competitive. Seventy-six percent of the total sample had a competitive employment outcome, (n = 788). From the total data set, 292 case records were dropped because they represented

cases that were closed without an employment outcome for reasons such as death, relocation, or inability to contact, leaving 1,036 records that were closed with an employment outcome. Of these, 81.1% of the men and 70.9% of the women had a competitive employment outcome. Whites had a 76.9% competitive closure rate, and non-Whites had a rate of 74.7%.

Table 4

Demographic Characteristics by Employment Status at Closure

Variables	Total Sample	Employment at Closure	
		Competitive	Non-Competitive
Competitive Employment at Closure			
% with Competitive Employment	76.1	....	....
Number received	788	....	....
Weekly Earnings at Closure (\$)	269.53	320.79	21.72
Standard Deviation	264.929	262.238	54.214
Age at Application (in years)	44.1	44.2	45.7
Standard Deviation	14.1	13.7	13.9
Race (white/nonwhite)			
% White	61.5	76.9	23.1
% Non-White	38.5	74.7	25.3
Gender (male/female)			
% Female	48.0	70.9	29.1
% Male	52.0	81.1	18.9
Competitive Employment at Application			
% with Competitive Employment	16.6	91.0	9.0

(table continues)

Table 4 (continued)

Variables	Total Sample	Employment at Closure	
		Competitive	Non-Competitive
Weekly Earnings at Application (\$)	95.7	137.8	30.1
Standard Deviation	21.2	239.8	100.4
Education at Application			
% Less Than High School	27.5	24.9	27.8
% High School Graduates	45.0	43.5	51.2
% Beyond High School	27.5	31.6	21.0
Onset of Disability			
% with Congenital Disabilities	36.2	43.0	24.2
[N]	[1,328]	[788]	[248]

The weekly earnings at closure as reported in Table 4 revealed that the mean weekly earnings for the 951 closed cases were \$269.53; 377 cases did not report earnings, which include the 292 that were closed without an employment outcome and an additional 85 cases that failed to report weekly earnings data. In addition, mean earnings for men was \$318.59 and women \$220.37. Whites earned \$303.16 and non-Whites \$215.30. For all cases with competitive employment at closure the average weekly earnings was \$320.79.

The data in Table 4 also display demographic features showing that 36.2% of the cases were people who were born with blindness and that the average age at application was 44.1 years; 61.5% of the closed cases were Whites and 38.5% were non-Whites. The cases were almost distributed equally by gender: 48% of the cases were women and 52% were men. With regard to education levels of participants at entrance, 27.5% had less than a high school education, 45% had a high school diploma, and 27.5% had more than

a high school education. Of the people entering the program, 16.6% were already competitively employed, with average weekly earnings of \$95.

Table 5 presents the 11 program services that comprise the independent variables for Questions 2 and 4, which are distributed by total percent received. The program services shown in Table 5 reveal that no one category received 50% of a given service, that 6 of the 11 services were provided to at least 20% of the total sample, and that 5 services were provided at a rate ranging from 2% of the population to 13%.

Table 5

Program Services by Employment Status at Closure

Variables	Total Sample	Employment at Closure	
		Competitive	Non-Competitive
Academic Training			
% Received	5.7	89.4	10.6
Number received	76.0	59.0	7.0
Vocational Training			
% Received	9.6	76.1	23.9
Number received	128.0	89.0	28.0
On the Job Training			
% Received	2.0	92.0	8.0
Number received	26.0	23.0	2.0
Job Readiness Training			
% Received	28.1	84.6	15.4
Number received	373.0	269.0	49.0

(table continues)

Table 5 (continued)

Variables	Total Sample	Employment at Closure	
		Competitive	Non-Competitive
Disability Augmentative Training			
% Received	4.8	52.6	47.4
Number received	64.0	30.0	27.0
Miscellaneous Services			
% Received	38.5	67.0	33.0
Number received	511.0	300.0	148.0
Job Search Services			
% Received	21.8	93.7	6.3
Number received	289.0	252.0	17.0
Job Placement Services			
% Received	26.7	95.9	4.1
Number received	354.0	331.0	14.0
On-the-Job Supports			
% Received	12.9	92.7	7.3
Number received	171.0	139.0	11.0
Rehabilitation Technology Services			
% Received	39.3	79.8	20.2
Number received	522.0	364.0	92.0
Other Services			
% Received	49.2	75.6	24.4
Number received	653.0	441.0	142.0
[N]	[1,328]	[788]	[248]

Prediction of Competitive Employment

Research Question 1: What are the relationships between selected demographic factors and the employment status achieved by a consumer upon exiting?

Research Question 2: What are the relationships between selected program services and the employment status achieved by a consumer upon exiting?

Table 6, Odds Ratios of Competitive Employment among Cases by Demographic Factors and Program Services, reports logistic regression results for both Questions 1 and 2. Table 6 also reports three models: Models 1 and 2 report the results for Questions 1 and 2, and Model 3 reports the relationships of services to the dependent variable while controlling for demographic factors. All models report odds ratios and significance.

Table 6

Odds Ratios of Competitive Employment among Cases by Demographic Factors and Services Received

Variables	Model (1)	Model (2)	Model (3)
Congenital Onset of Disability	2.460***		1.524*
Gender			
Females	0.616**		0.751
Weekly Earnings at Application	1.006***		1.006***
Age at application	0.990		1.005
Race			
White	0.990		1.112
Competitive Employment (Application)	1.197		1.79
Education at Application			
Less Than High School	0.697		0.563*
High School Graduates	0.70		0.589*
Beyond High School	-----		-----
Job Placement Services		7.145***	7.104***
On-the-Job Supports		3.796***	3.629***
Academic Training		3.377**	4.425**
Job Readiness Training		2.33***	3.61***
Disability Augmentative Training		0.32***	0.31**
Rehabilitation Technology Services		1.60**	0.86
Miscellaneous Services		0.43***	0.53**
On the Job Training		2.409	2.648
Job Search Services		1.574	2.129*
Other Services		1.379	1.333
Vocational Training		0.63	0.83
Model Chi-Square (df)	133.838***(8)	227.60***(11)	353.62***(19)
Percent Classified Correctly	76.1 (null) - 76.2	78.70	84.6
[N]	[1,036]	[1,036]	[1,036]

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Model 1—Demographic Variables

With regard to the dependent variable, 76.1% was classified correctly by chance (the Null Model). Using the demographic variables, the percent classified correctly increased to 76.2% and was statistically significant with a chi-square of 133.838 ($p <$

0.001). Gender was found to be significant for women ($p < 0.01$), with women being almost 40% less likely than men to obtain competitive employment. Weekly earnings at application was also statistically significant ($p < 0.000$), illustrating that the more people earn when they enter the program the more likely they are to have a competitive outcome upon exiting the program. For every dollar increase in weekly earnings at application, there is a 0.6% increase in the odds of achieving competitive employment. The onset of disability was significant ($p < 0.001$), indicating that people who were born with their disability were 2.46 times more likely to have competitive employment at closure.

Model 2—Program Services

Again, 76.1% of the dependent variable was classified correctly by chance (the Null Model). Using the program service variables, the percent classified correctly increased to 78.7% and was statistically significant, with a chi-square of 227.597 ($p < 0.001$). Five of the 11 program services were found to have a significant relationship with the dependent variable. Academic training showed that those who received academic training were 3.37 times more likely to have a competitive outcome than those who did not receive this service ($p < 0.01$). Likewise, job readiness training and job placement services were found to be highly significant ($p < 0.001$). On-the-job supports ($p < 0.001$) and rehabilitation technology ($p < 0.01$) were also both significant. Contrary to previous research, disability augmentative services were found to be significant in the wrong direction, meaning that persons who received this service were 68% less likely to have competitive employment at exit.

Model 3—Hierarchical Model

The third model examined the impact of program services while controlling for the demographic variables. The percent classified correctly in Model 1 with the demographic variables was 76.2% and the percent improvement when adding the program services was 8.4%. The chi-square value associated with adding the program services was 353.618 ($p < 0.001$), which supports their contribution above and beyond the demographic variables. Weekly earnings at application remained statistically significant, as did onset of disability. Academic training and job readiness became stronger, and disability augmentative and miscellaneous services remained significant, as did job placement services and on-the-job supports.

Prediction of Weekly Earnings

Research Question 3: What are the relationships of the selected demographic factors to the amount of income a consumer earned upon exiting?

Research Question 4: What are the relationships between selected program services and the amount of income a consumer earned upon exiting?

The dependent variable of income is measured by weekly earnings data, captured after a person has been working on a job for 90 days. Table 7 introduces weekly earnings at closure by showing Pearson R correlations.

Table 7

Correlations with Weekly Earnings upon Exit

Demographic Variables	Weekly Wages (Pearson R)
Weekly Earnings at Application	0.589**
Beyond High School at Closure	0.261**
Competitive Employment at Application	0.187**
Gender (Females)	-0.185**
Race/Ethnicity (Whites)	0.161**
Less than High School at Closure	-0.149**
High School Graduate at Closure	-0.131**
Age	-0.081*
Congenital Onset of Disability	0.075*
Program Services	
Rehabilitation Technology	0.231**
Miscellaneous Services	-0.164**
Academic Training	0.144**
Job Placement Assistance	0.084**
Disability Augmentative	-0.071*
Other Services	-0.059
On-the-job supports	0.055
Vocational Training	-.022

(table continues)

Table 7 (continued)

Demographic Variables	Weekly Wages (Pearson R)
Job Search Services	-0.017
Job Readiness Training	0.009
On-the-job Training	-.002

Table 8, Weekly Earnings at Closure, presents the results of multiple regressions to answer Research Questions 3 and 4, displayed in three models, reported in dollars among cases by demographic factors and program services.

Table 8

Weekly Earnings at Closure (\$) Among Cases by Demographic Factors and Program Services

Variables	Model (1)	Model (2)	Model (3)
Weekly Earnings at Application	0.631***		0.623***
Age at application	-0.14***		-0.077**
Competitive Employment at Application	-0.13***		-0.120***
Race			
White	0.103***		0.100***
Education at Application			
Less Than High School	-0.103**		-0.085**
High School Graduates	-0.075*		-0.050
Beyond High School	-----		-----

(table continues)

Table 8 (continued)

Variables	Model (1)	Model (2)	Model (3)
Gender			
Females	-0.097***		-0.082**
Congenital Onset of Disability	0.058*		0.006
Rehabilitation Technology Services		0.260***	0.112***
Miscellaneous Services		-0.197***	-0.107***
Academic Training		0.143***	0.158***
Job Search Services		-0.089*	-0.019
Disability Augmented Training		-0.073*	-0.047
Job Placement Services		0.068	0.075*
Vocational Training		-0.052	-0.035
Other Services		-0.041	-0.032
Job Readiness Training		0.021	0.095***
On the Job Training		0.018	0.011
On-the-Job Supports		0.018	0.016
F Test	84.509***	12.776***	44.968***
R Square	0.418	0.130	0.479
[N]	[951]	[951]	[951]

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; *Note*: Standardized Coefficients are Reported.

Model 1—Demographic Relationship to Weekly Earnings

The r square associated with the demographics model is 0.418, and the F test supports this r square as being statistically different from chance ($F = 84.509$ and $p = 0.000$). Standardized coefficients are reported in Table 8 and are explained here in their unstandardized form. Age at application showed that for every year increase in age there is a \$2.73 decrease in earnings, all other variables being equal. Whites earn \$55.98 more than non-whites, and women earn \$51 less than men. A counter-intuitive finding is for those persons who had competitive employment at application—they earned \$85.00 less

per week than those persons who entered the program without a competitive job.

However, for those persons who had weekly earnings at application there was a positive relationship in that an increase of a dollar at application correlated with a \$0.74 increase at closure. People who entered the program with an education level of less than high school earned \$63.40 less than those who had an education level of beyond high school, and high school graduates at the time of application earned \$40.00 less than those who entered with an education level beyond high school. People who entered the program and had a congenital onset of disability earned, at closure, \$31.34 more a week more than those whose blindness came later in life.

Model 2—Program Services Relationships to Weekly Earnings

Model 2 reports program services relationships to the dependent variable. The R square associated with the program services model is 0.130, and the F test supports this R square as being statistically different from chance ($F = 12.776$ and $p = 0.000$). Only two program services showed a positive relationship, and three showed a negative relationship, while six of the program services had no relationship to the dependent variable. People who received academic training earned \$155.44 more than people who did not receive this service, and those receiving rehabilitation technology had \$138.35 of earnings more than those who did not receive this service.

Three services showed a significant but negative relationship to the dependent variable: those receiving miscellaneous services earned \$104 per week less than those who did not receive these services, those receiving disability augmentative services earned \$85 less than people who did not, and those receiving job search services earned \$52 less than people who did not have these services.

Model 3—Hierarchical Model

Model 3 reports program services relationships to weekly earnings while controlling for demographics. The r square associated with the Hierarchical Model is 0.479, and the F test supports this r square as being statistically different from chance ($F = 44.968$ and $p = 0.000$). There is a 0.061 increase in the R square from the demographic model. Statistics on other variables are as follows:

- Age coefficient: -0.487, remains a significant relationship with earnings with a weaker strength in the coefficient
- Race coefficient: 54.546, remains significant
- Gender: -43.637, still significant, smaller effect on the dv
- Competitive employment at application, similar effect: -0.120.
- Weekly earning at application: 0.623, remaining significant
- Education at application: less than high school, -52.150; high school, -26.663; was no longer significant.

Program Services

- Academic: 172.142, stayed significant.
- Miscellaneous services: -57.029, remained significant but lost half of its effect
- Rehab Technology: 59.699, stayed significant.

Summary

A total of 1,328 cases were analyzed for Research Questions 1 and 2 to identify relationships of assigned demographic factors and selected program services to the dependent variable of competitive outcomes. In summary, the results are as follows.

Research Question 1: What are the relationships between selected demographic factors and the employment status achieved by a consumer upon exiting? Seven assigned demographic variables were analyzed to identify relationships to competitive outcomes in Question 1, and three of the variables were found to have a relationship. Onset of disability was a very strong predictor of whether a person would have a competitive employment outcome—people who were born with their disability were 2.46 times more likely to have competitive employment at closure. A person's age and race showed no relationship to the outcome, although a person's gender was found to have a relationship, with women being almost 40% less likely than men to obtain competitive employment. The final demographic variable that showed a relationship to competitive outcomes was whether a person had weekly earnings at application, which was exemplified by the fact that the more people earn upon entering the program the more likely they will be to have a competitive outcome. Competitive employment at application and level of education at application showed no relationship.

Research Question 2: What are the relationships between selected program services and the employment status achieved by a consumer upon exiting? Five of the 11 program services were found to have a significant relationship to whether a person would have a competitive employment outcome in Question 2. Those who received academic training were 3.37 times more likely to have a competitive outcome than those who did

not receive this service. Likewise, job readiness training and job placement services were both found to have a relationship in Question 2. On-the-job supports and rehabilitation technology were also both significant, but persons who received disability augmentative services were 68% less likely to have competitive employment.

Research Question 3: What are the relationships between selected program services and the amount of income earned by a consumer upon exiting? Two program services, academic training and rehabilitation technology, showed a positive relationship, and three showed a negative relationship, meaning that those persons who received miscellaneous services, disability augmentative-related services, and job search services earned less money per week upon closure. In addition, the findings showed that six of the program services had no relationship to the dependent variable.

Research Question 4: What are the relationships between selected demographic factors and the amount of income earned by a consumer upon exiting? The same seven assigned demographic factors as in Questions 1 and 2 were used to find relationships to weekly earnings. Just as in Question 1, people whose disability onset was at birth also had a relationship in Question 3, with their earnings at closure being \$31.34 more per week than those of people whose blindness came later in life. Earnings upon closure were also related to age at application in that for each year older a person is upon entering the program they have a \$2.73 decrease in earnings. Again, weekly earnings at application showed a positive relationship. Among race and gender, the findings were that whites earn \$55.98 more than non-Whites and women earn \$51 less than men. Those persons who had competitive employment at application and those persons who had less education earned less money at closure.

V. DISCUSSION, IMPLICATIONS AND SUMMARY

Over one half (59%) of the total cases of blind persons in the Alabama Rehabilitation Program leave with a competitive employment outcome. Based on a statistical analysis of four years of closed cases, the demographics for persons who are blind and have a competitive employment outcome with higher weekly earnings at closure are: (a) individuals who have weekly earnings at the time of application, (b) younger persons, (c) men, (d) individuals who had their disability onset at birth, and (e) those who have received academic training and rehabilitation technology. This profile resulted from the investigation of factors that have a relationship to employment outcomes and earnings for people who are blind and is consistent with similar findings by Capella-McDonnall (2005), Candela and Wolffe (2001), Young (1996), and DeMario (1992).

This study focused on 1,328 people who are blind and who received services from the federal Vocational Rehabilitation Program in Alabama during 2002–2005. It examined the predictability and effect of seven specific assigned demographic and eleven program service variables on employment outcomes and weekly earnings. While some of the findings from the study supported previous research, other findings generated counter-intuitive results.

Research Question 1 sought to identify the relationship between assigned demographic factors and competitive employment. Relationships were found between competitive employment and (a) gender, (b) onset of disability, and (c) earnings at the time of application.

Research Question 2 sought to identify the relationship between Rehabilitation Program services that a person received and competitive employment. The five program variables that showed significant relationships with competitive employment were (a) academic training, (b) job readiness training, (c) job placement services, (d) on-the-job supports, and (e) rehabilitation technology.

Research Question 3 asked which program services would have a relationship to weekly earnings at the time the case record was closed. The results indicated that two program service variables, academic training and rehabilitation technology, have a positive relationship to earnings and that three program service variables—(a) miscellaneous services, (b) disability augmentative services, and (c) job search services—have a negative relationship to earnings at closure.

Research Question 4 analyzed assigned demographic variables as predictors for earnings at closure. The demographic variables that had a relationship to one's earnings at closure were (a) the time of onset of a person's blindness, (b) gender, (c) race, (d) age, and (e) earnings upon application.

Limitations of the Study

The results reported from this study are to be interpreted within the context of its methodological limitations. First, the study was limited to analyzing only the

Rehabilitation Program in Alabama and only those program participants whose primary disability was blindness. A comparison of these results with similar data obtained from other states and for other disabilities would have provided a more sound and comprehensive basis for interpretation. Also, this study was restricted to analyzing 18 predictor variables to examine relationships with employment and earnings. Numerous human and programmatic factors contribute to the status of employment and earnings. We can expect, for example, that the emotional development of a person, family support, personal motivation, and intelligence level all have relationships with eventual outcomes. However, none of these factors were a part of this study. Also, programmatic factors that might contribute to a participant's success but were not addressed in this study include such considerations as funding, state policy decisions, preparation level of program personnel, and compliance.

Assigned Demographics

Again, this study sought to examine the relationships of a person's age, race, gender, and four other assigned demographic variables with weekly earnings and competitive employment at closure. There were no significant relationships between competitive closure rates and age, race, or gender, but there were significant relationships between weekly earnings at closure and race and gender. Specifically, whites and men both earned approximately \$100 more a week than did women and non-whites. In addition, there was an over-representation of women in the non-closure employment status, at 60% of all non-competitive cases, which may suggest a gender difference in terms of expectations.

The onset of blindness, whether occurring at birth or later in life, proved to have a statistically significant relationship with competitive employment and weekly earnings at closure. People who were born with blindness earned \$31 more per week than those whose blindness had a later onset. This finding may suggest that the 36% of the total of the study population who were born with blindness had developed a greater comfort level with the disability. Alternatively, it may suggest that people born with their disability received skill training that was different from and more advantageous than that received by those who were blinded subsequent to birth. This is an important demographic variable to be examined in future research.

Education level, competitive employment, and weekly earnings at the time of application were not significant to the eventual employment outcome. Weekly earnings, however, did show a relationship to earnings upon exiting. People who had a competitive job at the time of application earned less than those who entered the program without a competitive job. This finding may suggest that the 16% of the people entering the Rehabilitation Program with a competitive job were seeking employment in jobs similar to those they had when they entered the program.

Program Services

The findings of this study support the premise that academic training leading to a degree, along with rehabilitation technology, predicts employment outcomes as defined by both competitive employment closures and higher weekly earnings. Clearly, these two services were the winners in the study, with both translating into positive outcomes for blind people.

Academic/university training that leads to a degree was found to be a significant predictor of both wages and employment, enhancing an individual's opportunities for competitive employment three-fold and increasing a person's wages. However, only 7% of the total population of closed competitive cases received academic training. This low percentage calls for attention when we consider that approximately 45% of the total population had a high school degree at application as their highest level of education and that 60% of high school graduates in Alabama attend college (National Center for Higher Education Management Systems, 2007). The term 'academic training' does not indicate that a person necessarily completed college, but rather that he or she received this type of training at some point in their rehabilitation plan. All services provided to an individual under the Rehabilitation Act are, theoretically, provided in consultation with the consumer, and the consultation process is referred to in the Act as "Informed Choice." Many questions arise when we look at the differences between the rate of academic training received by participants in the Alabama Rehabilitation Program and that of the general population. Also, further research is suggested for issues such as funding, compliance, and state policy. Knowing that academic training that leads to a degree provides people with \$155 more in wages per week than those who have not had this training would seem to argue that we should embrace this service at a rate greater than 7%.

Rehabilitation technology proved to have a statistically significant relationship with competitive employment and higher wages. Of the total sample, 39% received this service, including 46% of people who had a competitive employment outcome and 37% of those who had a non-competitive outcome.

Rehabilitation technology consists of (a) services aimed at teaching participants to operate a computer, (b) the design of equipment, and (c) the application of engineering principles to accommodate the loss of function in a given area. As such, it is no surprise that rehabilitation technology translates into competitive jobs and higher earnings given the technological orientation of today's society (Wolffe, 2003).

Three additional program services—job readiness training, job placement services, and on-the-job supports—were significantly related to a competitive employment outcome, although they did not relate to earnings. Thus, they are valuable predictors of employment status. Job readiness services, which were provided to about 28% of the population, help to prepare participants for work, and job placement services, which were provided to about 26% of the population, help them to obtain interviews. On-the-job supports, which assist people who are already working at a job, were provided to 12% of the population.

Contrary to previous research, disability augmentative services were found to be a contra-indication to both having competitive employment and earning higher earnings. The data show that persons who received this service were 68% less likely to have competitive employment and that they earned \$85 less per week than those who did not have the service.

Disability augmentative-related services are provided to people to help minimize the consequences of a disability. Blind people would receive this service to learn skills such as reading and writing Braille and traveling with a long cane in their environment—referred to as orientation and mobility training—to learn independent living skills for cooking and shopping. Many other skills are encompassed by disability augmentative

services, and this training is commonly provided in a community-based center with residential facilities available.

Of the closed cases, 36% represented blind people whose disability onset was at birth. Having been born with blindness indicates that those people would have had an opportunity to learn augmentative skills during their elementary school years. Learning Braille, orientation and mobility, and independent living are common components of education plans for blind students during their elementary years, and this would be a likely explanation for their not having the need for augmentative skills training from the Rehabilitation Program. However, 64% of the sample population entered the Rehabilitation Program having acquired their blindness after birth.

Acquiring a disability later in life may indicate that these individuals had not had an opportunity to receive any augmentative skills training. Further research is needed to identify the differences between those whose disability onset was at birth and those whose blindness was acquired later, although an intuitive hypothesis would be that a large number of participants in the Alabama Rehabilitation Program would need this training—well beyond the 5% who received it.

Most of the literature cited in this study has indicated the positive benefits for blind people of augmentative skills training of some type (e.g., Candela & Wolffe, 2001; Capella-McDonnall, 2005; Cavanaugh & Rogers, 2002; Crudden, Sansing, & Butler, 2005; DeMario, 1992; Wolffe, 1998). The literature findings, however, are very much in contrast to the results reported in this study, which are that augmentative skills are a contra-indication to employment and earnings. This finding would seem to call for

further investigation, and the first obvious goal would be to investigate the quality of the augmentative services provided by the Alabama agency.

Issues of funding and policy should also be addressed. The low percentage of people receiving this service indicates a need for education for both the Rehabilitation Program personnel and the program participants. Intuition strongly indicates that years of previous research cannot be wrong in recommending this service as a crucial skill for competitive employment. Why, then, do people in Alabama receive the service with low frequency, and why, when they do receive the service, are the outcomes not positive?

Miscellaneous services were provided to 60% of the cases who had a non-competitive employment outcome and to 38% of the cases that had a competitive employment outcome. Unfortunately, however, receiving this service translated into lower weekly earnings and a non-competitive outcome. The definition of miscellaneous services—any service not recorded elsewhere—does very little to point us toward an understanding of their impact. However, the relatively large percentage of people who received the service—39% of the study population—does help to direct attention to the question of why so many people received a service that yielded poor results. Intuitively, it would seem that the services must be at little cost, or that they are meaningless. All that is known is that the 511 persons who received miscellaneous services earned \$104 less per week than those who did not receive the services.

Job search services were found not to be related to a competitive employment outcome and to translate into lower earnings. Given that 21% of the sample received this service—32% of competitive closures and 7% of non-competitive closures—the lack of significance to an employment outcome and the lower weekly earnings may indicate that

this service was not provided at its optimum level. Job search services are activities that help a person search for a job, including identifying companies, creating resumes, and learning how to do successful interviews. Again, an opportunity for further investigation exists to isolate why seemingly beneficial services translate into \$52 less per week in earnings.

Implications and Summary

The findings of this study at times disagree with results reported elsewhere, but more often than not they support the body of existing research. Age, gender, race, education level, having a competitive job at application, and weekly earnings at application did not prove to be predictors or to have significant relationships with employment status. By contrast, gender, weekly earnings at application, and onset of disability did have relationships with weekly earnings upon closure. In addition, significant predictors and relationships did appear in the assigned demographic variable onset of disability.

Rehabilitation technology and academic training were found to be highly correlated with both earnings and employment status. When evaluating the Rehabilitation Program to identify practices to improve employment outcomes for individuals who are blind, these findings may assist in developing effective strategies. Rehabilitation technology as a predictor of wages and competitive employment outcomes, with emphasis on timely distribution and instruction in its use, will further enhance employment results. Furthermore, knowing how to use technology is essential, and thus

an education program for rehabilitation administrators and staff, as well as consumers, needs to be established to ensure opportunities for learning.

Academic training for consumers was also found to be highly significant, although it was not utilized very frequently. A plan for evaluating the beliefs that blind people have regarding this type of training and their awareness of its benefits could help promote academic training. Also, an examination of state policies that have a negative impact on the provision of academic training should be regularly conducted.

The onset of a disability, including blindness, can occur from birth to late in life. With the onset of disability having a significant relationship with both earnings at closure and competitive employment at closure, a focus on practices that mitigate the negative effects of both situations would only help the outcomes for both groups. In addition, it should be recognized that differences exist between these two groups and that strategies need to be implemented to address these differences. Disability-augmentative services are designed to address the unique factors of individuals to help mitigate the impact of a disability and to move a person from goal to achievement.

The most alarming finding in this study is the under-use and apparent dysfunction of this service as a tool of rehabilitation. A campaign for educating consumers and staff about the great benefits of augmentative training would certainly improve the frequency of use, and recognition of the outcome data presented here would highlight the need to evaluate the providers of this service to improve its quality.

Further research into factors that correlate with employment outcomes for people who are blind is needed to further identify patterns of predictors and significant relationships. Studying a number of variables has demonstrated the difficulty, despite the

necessity, of assigning predictor or significant relationship status to any one variable involved with employment. We cannot study a single variable alone—many variables combine to make a relationship. Therefore, continuous study that further refines multiple variables and the layers of their relationships is highly recommended.

This study has advanced the existing body of knowledge regarding services for the blind, and it has provided significant and relevant findings. These findings, and those of other studies, will help in the development of strategies to eliminate the gap between employment rates for individuals who are sighted and those who are blind.

REFERENCES

- Arnold, N., & Ipsen, C. (2005). Self-employment policies: changes through the decade. *Journal of Disability Policy Studies, 16*(4), 115–123.
- Beadles Jr., R., McDaniel, S., & Waters, S. (2000). Vocational outcomes of sensory impaired graduates of an adult vocational training program. *Journal of Visual Impairment & Blindness, 94*(5), 275–281.
- Becker Jr., H. (1998). An objective measurement system to assess employment. *Journal of Visual Impairment & Blindness, 92*(1), 80–85.
- Browning, P., Rhoades, C., & Crosson, A. (1980). *Advancing your citizenship*. Eugene, OR: Rehabilitation Research and Training Center in Mental Retardation, University of Oregon.
- Candela, A., & Wolffe, K. (2001). The employment consortium: An innovative approach to assisting blind and visually impaired people to find jobs. *Journal of Visual Impairment & Blindness, 95*(8), 494–497.
- Capella-McDonnall, M. (2005). Predictors of competitive employment for blind and visually impaired consumers of vocational rehabilitation services. *Journal of Visual Impairment & Blindness, 99*(5), 303–315.
- Carney, N. (1990). 70 years of hope, 70 years of success. *American Rehabilitation, 16*(3), 1–3.

- Cavanaugh, B., & Rogers, P. (2002). Employment patterns of older workers with visual impairments. *Journal of Visual Impairment & Blindness*, 96(9), 655–659.
- Chan, F., Rosenthal, D. (2006). Advanced research methodology in rehabilitation. *Rehabilitation Counseling Bulletin*, 49(4), 219–222.
- Cohen, A., Timmons, J., & Fesko, S. (2005). The workforce investment act. *Journal of Disability Policy Studies*, 15(4), 221–230.
- Cook, D. (2000). Issues in rehabilitation counseling. *Journal of Disability Policy Studies*, 11(1), 179–190.
- Crudden, A., Sansing, W., & Butler, S. (2005). Overcoming barriers to employment: Strategies of rehabilitation providers. *Journal of Visual Impairment & Blindness*, 99(6), 325–335.
- DeMario, N. (1992). Skills needed for successful employment: A review of the literature. *ReView*, 24(3), 115–126.
- Emener, W. (1991). An empowerment philosophy for rehabilitation in the 20th century. *The Journal of Rehabilitation*, 57(4), 7–17.
- Emener, W., & Marion-Landais, C. (1995). A follow-up study of division of blind services clients who received post-secondary educational services. *Journal of Rehabilitation*, 61(1), 55–59.
- Farish, J., & Moore, J. (1989). Rehabilitation feasibility of blind and visually impaired disability beneficiaries. *Journal of Rehabilitation*, 55(1), 63–68.
- Gibbs, W. (1991). Vocational rehabilitation outcome measures: The probability of employment and the duration. *American Rehabilitation*, 17(1), 10–16.

- Gibbs, W. (1990). Alternative measures to evaluate the impact of vocational rehabilitation services. *Rehabilitation Counseling Bulletin*, 34(1), 33–53.
- Giesen, J., Cavanaugh, B., & Sansing, W. (2004). Access to vocational rehabilitation: The impact of race and ethnicity. *Journal of Visual Impairment & Blindness*, 98(7), 410–419.
- Gould, M. (1986). Self-advocacy: Consumer leadership for the transition years. *Journal of Rehabilitation*, 52(4), 49–66.
- Hagen-Foley, D., Rosenthal, D., & Thomas, D. (2005). Informed consumer choice in community rehabilitation programs. *Rehabilitation Counseling Bulletin*, 48(2), 110–117.
- Houtenville, A. (2003). A comparison of the economic status of working-age persons with visual impairments and those of other groups. *Journal of Visual Impairment & Blindness*, 97(3), 133–149.
- Hoyt, W., Leierer, S., & Millington, M. (2006). Analysis and interpretation of findings using multiple regression techniques. *Rehabilitation Counseling Bulletin*, 49(4), 223–233
- Ipsen, C., Arnold, N., & Colling, K. (2005). Self-employment for people with disabilities: enhancing services through interagency linkages. *Journal of Disability Policy Studies*, 15(4), 231–240.
- Jernigan K. (1970). Blindness — The myth and the image. An address to the convention of the National Federation of the Blind. Houston, Texas.
- Kirchner, C. (2000). Disability policy, social research, and the social movement. *Journal of Disability Policy Studies*, 11(2), 105–121.

- Kirchner, C., & Johnson, G. (1997). Research to improve vocational rehabilitation: Employment. *Journal of Visual Impairment & Blindness*, 91(4), 377–383.
- Kiselica, M., & Robinson, M. (2001). Bringing advocacy counseling to life: The history, issues, and human dramas of social justice work in counseling. *Journal of Counseling & Development*, 79(4), 387–405.
- Klinger M. (2002). Organizational culture and people with disabilities. *Disability Studies Quarterly*, 22(1), 21–25.
- Kosciulek, J. (1999). Consumer direction in disability policy formulation and rehabilitation service delivery. *Journal of Rehabilitation*, 65(2), 4–19.
- Lewis, S., & Petterson, J. (1998). Rehabilitation counselors and rehabilitation teachers in state vocational rehabilitation agencies. *Journal of Visual Impairment & Blindness*, 92(3) 135–145.
- Linhorst, D., Eckert, A., Hamilton, G., & Young, E., (2001). The involvement of a consumer council in organizational decision making in a public psychiatric hospital. *Journal of Behavioral Health Services & Research*, 28(4), 427–440.
- Maxson, J. (1997). Employment express: An innovative approach to improve employment outcomes. *Journal of Visual Impairment & Blindness*, 91(5), 1–4.
- Miller, J. (2002). The role of orientation and mobility instructors and rehabilitation teachers in enhancing employment opportunities for persons who are visually impaired. *Journal of Visual Impairment & Blindness*, 96(12), 852–856.
- Moore, J. (2005). The need for reciprocity between states in creating employment opportunities in the Randolph-Sheppard program. *Journal of Visual Impairment & Blindness*, 99(9), 549–553.

- Moore, J., & Cavanaugh, B. (2003). Self-employment for persons who are blind. *Journal of Visual Impairment & Blindness*, 97(6), 366–370.
- Nagle, K. (2001). Transition to employment and community life for youths with visual impairments: Current status and future directions. *Journal of Visual Impairment & Blindness*, 95(12), 78–99.
- National Center for Higher Education Management Systems. (2007). Retrieved on May 25, 2008 from www.higheredinfo.org/.../index.php?submeasure=63&year=2004&level=nation&mode=data&state=0
- O’Day, B., & Goldstein, M. (2005). Advocacy issues and strategies for the 21st century: key informant interviews. *Journal of Disability Policy Studies*, 15(4), 240–251.
- Orr, A., & Rogers, P. (2001). Development of vision rehabilitation services for older people who are visually impaired: A historical perspective. *Journal of Visual Impairment & Blindness*, 95(11), 669–690.
- Pennell, R. (2001) Self-determination and self-advocacy. *Journal of Disability Policy Studies*, 11(4), 223–239.
- Putnam, M. (2005). Developing a framework for political disability identity. (conceptualizing disability). *Journal of Disability Policy Studies*, 16(3), 188–199.
- Randolph-Sheppard Act of 1936, as amended (P.L. 74-732), 20 U.S.C. Section 107 et seq.
- Raudenbush, C. (2003). Successful outcomes for blind vocational rehabilitation consumers in the United States. Unpublished manuscript. Minnesota State Services for the Blind.
- Rehabilitation Act of 1973, as amended (P.L. 105-220), 20 USC 107, et seq.

- Rhoades, D., McFarland, K., & Knight, P. (1995). Evolution of consumerism in rehabilitation counseling a theoretical perspective. *The Journal of Rehabilitation*, 61(2), 26–42.
- Roberts, A. (1992). Looking at vocational placement for the blind. *ReView*, 23(4), 8–19.
- Schaefer, K., & Moore, J. (2002). Strategies for enhancing the business enterprise program. *Journal of Visual Impairment & Blindness*, 96(9), 659–679.
- Schmidt-Davis, H., Hayward, B., & Harold B. (2000). Basic skills and labor market success: Findings from the vr longitudinal study. *American Rehabilitation*, 25(4), 11–19.
- Shaw, K. (1998). Community rehabilitation organizations: Transition to what? *American Rehabilitation*, 24(1) 36–49.
- Szymanski, M., King, J., Randall M., & Jenkins, W. (1989). The state-federal rehabilitation program: Interface with special education. *Exceptional Children*, 56(3), 70–78.
- Taheri-Araghi, M., & Hendren, G. (1994). Successful vocational rehabilitation of clients With retinitis pigmentosa. *Journal of Visual Impairment & Blindness*, 88(2), 128–132.
- Thomas, K. R. (1993). Commentary: Some observations on the use of the word “consumer”. *The Journal of Rehabilitation*, 59(2), 6–18.
- Thomas, S. (1999). Vocational evaluation in the 21st century: Diversification and independence. *Journal of Rehabilitation*, 65(1), 10–15.
- University of California (2004). The disability rights and independent living movement. Retrieved on September 6, 2006 from <http://www.lib.berkeley.edu>

- Vaughan, C. (1997). Why accreditation failed agencies serving the blind and visually impaired. *Journal of Rehabilitation*, 63(1), 7–15.
- Vaughan, C. E. (1993). Origins of conflicting professional and consumer images of blindness. *Journal of Rehabilitation*, 59(1) 10–16.
- Warren, P., Cavanaugh, B., & Giesen, J. (2004). Effects of race, gender, and other characteristics of legally blind consumers on homemaker closure. *Journal of Rehabilitation*, 70(4), 16–21.
- Wehmeyer, M., (2000). Riding the third wave. *Focus on Autism & Other Developmental Disabilities*, 15(2), 106–120.
- Wolf-Branigin, M., Daeschlein, M., Cardinal, B., & Twiss, M. (2000). Differing priorities of counselors and customers to a consumer choice model in rehabilitation. *Journal of Rehabilitation*, 66(1), 18–22.
- Wolffe, K. (2003). Wired to work: An analysis of access technology training for people with visual impairments. *Journal of Visual Impairment & Blindness*, 97(10), 633–645.
- Wolffe, K. (2000). Critical skills in career advancement for people with visual impairments. *Journal of Visual Impairment & Blindness*, 94(8), 532.
- Wolffe, K. (1998). Preparing people with visual impairments for work. *Journal of Visual Impairment & Blindness*, 92(2), 11–15.
- Wolffe, K., & Candela, A. (2002). A qualitative analysis of employers' experiences with visually impaired workers. *Journal of Visual Impairment & Blindness*, 96(9), 622–634.

- Wolffe, K., & Spungin, S. (2002). A glance at worldwide employment of people with visual impairments. *Journal of Visual Impairment & Blindness*, 96(4), 245–255.
- Wolfensberger, W. (1972). Defining the normalization principle and its major implications the role of ideology in shaping human management models.
- Wolfensberger, W. (2000). A brief overview of social role valorization. *Mental Retardation*, 38(2), 105–123.
- Young, C. (1996). How successful vocational rehabilitation counselors place clients in jobs: Results of a focus group. *Journal of Visual Impairment & Blindness*, 90(2), 1–5.

APPENDICES

APPENDIX A
REHABILITATION PROGRAM SERVICES

Rehabilitation Program Services

The following is a list of all 22 services provided by the Rehabilitation Act, along with a short description. Each service is coded in the RSA-911 data set with a two digit code and appears in data positions 110-153. The first digit in the two digit code represents the provider of the service and the second digit represents the funder of the service.

1. Assessment Services means activities performed to determine an individual's eligibility for VR services, and/or to determine the nature and scope of VR services to be included in the IPE, represented in data position 110-111...
2. Diagnosis and Treatment of Impairments includes: (a) diagnosis and treatment for mental and emotional disorders, (b) dentistry, (c) nursing services, (d) hospitalization in connection with surgery or treatment, (e) drugs and supplies, (f) prosthetic, orthotic, or other assistive devices, (g) eyeglasses and visual services, (h) podiatry, (i) physical therapy, (j) occupational therapy, (k) speech or hearing therapy, (l) mental health services, (m) treatment of the provision of physical and mental restoration services, (n) special services for the treatment of individuals with end-stage renal disease, (o) other medical or medically related rehabilitation services, represented in data position 112-113.

3. Vocational Rehabilitation Counseling and Guidance: discrete therapeutic counseling and guidance necessary for an individual to achieve an employment outcome, represented in data position 114-115.
4. College or University Training: academic training above the high school level, leading to a degree, represented in data position 116-117.
5. Occupational/Vocational Training: training to prepare students for gainful employment in a recognized occupation, not leading to an academic degree or certification, represented in data position 118-119.
6. On-the-job Training: Training in specific job skills by a prospective employer, represented in data position 120-121.
7. Basic Academic Remedial or Literacy Training, services provided to assist an individual to obtain skills in reading, writing, and mathematics that will lead to an assist an individual in obtaining employment. Represented in data position 122-123.
8. Job Readiness Training, Training to assist an individual in preparing a resume, interviewing skills, and identifying an occupation. Represented in data position 124-125.
9. Disability-related Augmentative Skills Training, including but not limited to: orientation and mobility; rehabilitation teaching; training in the use of low vision aids; Braille; speech reading; sign language; and cognitive training/retraining, represented in data position 126-127.
10. Miscellaneous Training, represented in data position 128-129.
11. Job Search Assistance, represented in data position 130-131.

12. Job Placement Assistance, represented in data position 132-133.
13. On-the-job Supports: support services that stabilize the placement and enhance job retention. Such services include job coaching, follow-up and follow-along, and job retention services, represented in data position 134-135.
14. Transportation Services, represented in data position 136-137.
15. Maintenance: monetary support provided for expenses, such as food, shelter, and clothing, that are in excess of the normal expenses of the individual and that are necessitated by the individual's participation in an assessment for determining eligibility and VR needs or while receiving services under an IPE, represented in data position 138-140.
16. Rehabilitation Technology, represented in data position 140-141.
17. Reader Services, represented in data position 142-143.

18. Interpreter Services, represented in data position 144-145.
19. Personal Attendant Services, represented in data position 146-147.
20. Technical Assistance Services: consultation services provided to conduct market analyses, to develop business plans, and to provide resources to individuals in the pursuit of self-employment, telecommuting, and small business operation outcomes, represented in data position 148-149.
21. Information and Referral Services, represented in data position 150-151.
22. Other Services: all services that cannot be identified elsewhere, including occupational licenses, tools and equipment, initial stocks and supplies, medical care for acute conditions arising during rehabilitation and constituting a barrier to the achievement of an employment outcome, represented in data position 152-153.

APPENDIX B
DATA COLLECTION METHODS

Data Collection

Data were collected by using the “Data Use Agreement Form” of the United States Department of Education Office of Special Education and Rehabilitative Services. The form was completed and signed by the author and faxed to Management/Program Analyst Vernita Washington in that office. Data request was executed: June 6, 2006 to obtain data from fiscal years 2002, 2003, 2004, and 2005. The data arrived at the author’s home in the form of a compact disk. The data was then transferred to a personal computer and imported into SPSS. The data arrives in a text file with 213 data points per service record.

States are required to report annual data for each case closure for each fiscal year; the data are collected in a specific format and each record is unique. Regardless of the employment status achieved by a consumer, each record is 213 characters in length and each set of characters represents one of 43 elements (United States Department of Education, 2006). Variables include, in part, the state where the consumer was served, date of application and closure, referral source, gender, race, primary and secondary disabilities, information regarding the consumer’s status at the time of both application and closure (i.e., employment status, hourly and weekly earnings, type and amount of public support), and type of and reasons for closure. Data are also collected on service information, including services provided and cost of purchased services.

Data points represent a case record’s final profile, for example, a two-digit code represents the state agency that provided the rehabilitation service, a single-digit data point represents a person’s gender, and a single-digit data point indicates employment status outcome.

6/2006

RSA Data-Use Agreement Form

Signed Form Rec'd _____

Name of Dataset: **RSA-911 and SSA Administrative Files Datalink**

Public- and/or restricted-use data collected and distributed by the Rehabilitation Services Administration may be used for statistical purposes only.

RSA does all it can to assure that the identity of data subjects cannot be disclosed. All direct identifiers, as well as any characteristics that might lead to identification, are omitted or modified in the dataset to protect the true characteristics of individuals. Any intentional identification or disclosure of a person violates the assurances of confidentiality given to the providers of the information. Therefore, users shall:

- Before accessing the data, read carefully and utilize the data-use documentation provided on the CD containing the dataset.
- Use the data in this dataset for statistical purposes only.
- Make no effort to determine the identity of any case reported through this database
- Make no use of the identity of any person or institution discovered inadvertently, and advise RSA of any such discovery.
- Not link this dataset with individually identifiable data from other RSA or non-RSA datasets.
- Notify RSA of errors you identify in the course of using the dataset and/or documentation.
- Not allow data CD to be duplicated for use by others who have not filed a Data-Use Agreement with RSA.
- Restrict analysis to only those research questions approved under the Data Request project description by both RSA and SSA.
- Return the CD and data to RSA by (*specify date*): _____

To proceed, you must signify that you understand and agree to comply with the above-stated requirements, by signing and dating this form, below.

Data-user's Signature _____ *Date* _____

Print Name Here

Mailing Address

Phone Number _____

Email Address _____

For Office Use Only --> Data CD sent on _____ by _____

APPENDIX C

TABLES

Table C1

Demographic Characteristics by Employment Status at Closure, Gender, and Race

Variables	Total Sample	Employment at Closure		Gender		Race		
		Competitive	Non-Competitive	Male	Female	White	Non-White	
Competitive Employment at Closure								
% with Competitive Employment	76.1	....	....	81.1	70.9	76.9	74.7
Number received	788	....	....	425	363	496	292
Weekly Earnings at Closure (in Dollars)								
Standard Deviation	269.53	320.79	21.72	318.59	220.37	303.16	215.3	
Age at Application (in years)								
Standard Deviation	264.929	262.238	54.214	316.122	188.916	312.288	146.539	
Age at Application (in years)								
Standard Deviation	44.1	44.2	45.7	42.9	45.2	43.8	44.5	
Race (white/nonwhite)								
% White	14.1	13.7	13.9	13.9	14.2	14.7	13.0	
% Non-White	61.5	62.9	60.1	65.4	57.4	....	....
Gender (male/female)								
% Female	38.5	37.1	39.9	34.6	42.6	....	....
% Male	48.0	46.1	60.1	....	....	44.8	53.2
Competitive Employment at Application								
% with Competitive Employment	52.0	53.9	39.9	....	....	55.2	46.8
% with Non-Competitive Employment	16.6	23.0	7.3	17.4	15.7	17.7	14.7	
Weekly Earnings at Application (in Dollars)								
Standard Deviation	83.4	77.0	92.7	82.6	84.3	82.3	85.3	
Education at Application								
% Less than High School	95.7	137.8	30.1	112.0	78.1	104.8	81.3	
% High School Graduates	21.2	239.8	100.4	240.3	152.4	233.1	143.2	
% Beyond High School	27.5	24.9	27.8	30.4	24.3	25.5	30.7	
Onset of Disability								
% with Congenital Disabilities	45.0	43.5	51.2	43.5	46.6	43.2	47.7	
Onset of Disability								
% with Congenital Disabilities	27.5	31.6	21.0	26.1	29.2	31.3	21.5	
Onset of Disability								
% with Congenital Disabilities	36.2	43.0	24.2	36.2	36.2	39.8	30.5	
	[N]	[1328]	[788]	[248]	[690]	[638]	[817]	[511]

Table C2

Program Services by Employment Status at Closure, Gender and Race

Variables	Total Sample	Employment at Closure		Gender		Race	
		Competitive	Non-Competitive	Male	Female	White	Non-White
Academic Training							
% Received	5.7	7.5	2.8	6.1	5.3	6.4	4.7
Number received	76	59	7	42	34	52	24
Vocational Training							
% Received	9.6	11.3	11.3	10.7	8.5	11.9	6.1
Number received	128	89	28	74	54	97	31
On the Job Training							
% Received	2.0	2.9	0.8	2.5	1.4	2.0	2.0
Number received	26	23	2	17	9	16	10
Job Readiness Training							
% Received	28.1	34.1	19.8	29.1	27.0	28.4	27.6
Number received	373	269	49	201	172	232	141
Disability Augmented Training							
% Received	4.8	3.8	10.9	4.6	5.0	5.3	4.1
Number received	64	30	27	32	32	43	21
Miscellaneous Services							
% Received	38.5	38.1	59.7	35.5	41.7	36.7	41.3
Number received	511	300	148	245	266	300	211
Job Search Services							
% Received	21.8	32.0	6.9	22.2	21.3	20.3	24.1
Number received	289	252	17	153	136	166	123
Job Placement Services							
% Received	26.7	42.0	5.6	27.8	25.4	25.0	29.4
Number received	354	331	14	192	162	204	150

(table continues)

Table C2 (continued)

Variables	Total Sample	Employment at Closure		Gender		Race		
		Competitive	Non-Competitive	Male	Female	White	Non-White	
On-the-Job Supports								
% Received	12.9	17.6	4.4	16.2	9.2	11.5	15.1	
Number received	171	139	11	112	59	94	77	
Rehabilitation Technology Services								
% Received	39.3	46.2	37.1	38.3	40.4	43.0	33.5	
Number received	522	364	92	264	258	351	171	
Other Services								
% Received	49.2	56.0	57.3	45.5	53.1	49.8	48.1	
Number received	653	441	142	314	339	407	246	
	[N]	[1328]	[788]	[248]	[690]	[638]	[817]	[511]

Table C3

Odds Ratio of Competitive Employment among Cases by Demographic Factors and Services Received Splitfile by Race

Variables	Model (1)		Model (2)		Model (3)	
	Whites	Non-Whites	Whites	Non-Whites	Whites	Non-Whites
Age at application	1.001	0.969**			1.017	0.985
Gender (Females)	0.531**	0.820			0.627*	1.197
Competitive Employment at Application	0.949	1.388			0.540	0.657
Weekly Earnings at Application	1.008***	1.004**			0.540*	0.547
Education at						
Less than High School	0.645	0.884			1.009***	1.004**
High School Graduates Application	0.583*	0.905			1.505	1.962
Beyond High School	....	....			....	....
Congenital Onset of Disability	2.399***	2.839**			1.149	3.061*
Academic Training			3.359*	4.657	5.537**	5.044
Vocational Training			0.584	0.780	1.035	0.741
On the Job Training			1.101	3.352	1.076	3.039
Job Readiness Training			1.669*	4.298***	2.530**	6.693***
Disability Augmented Training			0.341**	0.332	0.305**	0.329
Miscellaneous Services			0.492**	0.338**	0.487**	0.545
Job Search Services			2.133	1.045	3.109**	1.465
Job Placement Services			6.448***	9.908***	7.033***	9.207***
Job Coaching Services			2.354*	12.820**	2.429*	12.411**
Rehabilitation Technology Services			1.673*	1.309	0.828	0.740
Other Services			1.411	1.348	1.526	1.072
Model Chi-Square (df)	96.897***(7)	51.231***(7)	116.470***(11)		224.588*** (18)	159.210***(18)
Percent Classified Correctly (null)	(76.9) 76.1	(74.7) 76.2	126.654***(11)		7.1	10.0
	[N] [645]	[391]	[645]	[391]	[645]	[391]

* p < .05; ** p < .01; *** p < .001

Table C4

Weekly Earnings at Closure (in Dollars) among Cases by Demographic Factors and Program Services Splitfile by Race

Variables	Model (1)		Model (2)		Model (3)	
	Whites	Non-Whites	Whites	Non-Whites	Whites	Non-Whites
Age at Application	-0.098**	-0.296***			-0.039	-0.181***
Gender (Females)	-0.092**	-0.116**			-0.089**	-0.076
Competitive Employment at Application	-0.148***	-0.033			-0.137***	-0.014
Weekly Earnings at Application	0.668***	0.483**			0.655***	0.467***
Education at Application						
Less than High School	-0.077*	-0.229***			-0.0607	-0.210***
High School Graduates	-0.056*	-0.194***			-0.019	-0.193***
Beyond High School	....	....			....	....
Congenital Onset of Disability	0.061	0.091*			0.008	0.015
Academic Training			0.162***	0.103*	0.193***	0.089*
Vocational Training			-0.088*	0.059	-0.049	0.049
On the Job Training			0.014	0.017	-0.009	0.020
Job Readiness Training			0.018	0.049	0.080*	0.146**
Disability Augmented Training			-0.078	-0.079	-0.046	-0.056
Miscellaneous Services			-0.173***	-0.219***	-0.106**	-0.131**
Job Search Services			-0.097*	-0.073	-0.016	-0.014
Job Placement Services			0.047	0.238***	0.064	0.178**
On-the-Job Supports			0.022	0.062	0.014	0.062
Rehabilitation Technology Services			0.275***	0.218***	0.139***	0.074
Other Services			-0.035	-0.108*	-0.022	-0.076
R Square	0.421	0.37	0.364	0.468	0.069	0.01
	[N] [586]	[363]	[586]	[363]	[586]	[363]

* p < .05; ** p < .01; *** p < .001; *Note:* Standardized Coefficients are Reported

APPENDIX D

AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL



AUBURN
UNIVERSITY

Office of Human Subjects Research
307 Stanford Hall
Auburn University, AL 36849

Telephone: 334-844-5966
Fax: 334-844-4391
hsubject@auburn.edu

September 27, 2007

MEMORANDUM TO: J. Michael Jones
Rehabilitation and Special Education

PROTOCOL TITLE: "Factors the Correlate with Employment for People who are Blind"

IRB FILE NO.: 07-199 EX 0709

APPROVAL DATE: September 26, 2007

EXPIRATION DATE: September 25, 2008

The referenced protocol was approved "Exempt" from further review by IRB procedure on September 26, 2007 under 45 CFR 46.101 (b) (4):

"Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects."

You should retain this letter in your files, along with a copy of the revised protocol and other pertinent information concerning your study. If you should anticipate a change in any of the procedures authorized in this protocol, you must request and receive IRB approval prior to implementation of any revision. Please reference the above IRB file number in any correspondence regarding this project.

If you will be unable to file a Final Report on your project before September 25, 2008, you must submit a request for an extension of approval to the IRB no later than September 11, 2008. If your IRB authorization expires and/or you have not received written notice that a request for an extension has been approved prior to September 25, 2008, you must suspend the project immediately and contact the Office of Human Subjects Research for assistance.

A Final Report will be required to close your IRB project file.

If you have any questions concerning this Board action, please contact the Office of Human Subjects Research at 844-5966.

Sincerely,

Peter W. Grandjean, Chair
Institutional Review Board for the Use of Human
Subjects in Research

cc: Dr. Phil Browning

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
RESEARCH PROTOCOL REVIEW FORM**

For information or help completing this form, contact: THE OFFICE OF HUMAN SUBJECTS RESEARCH, 307 Samford Hall,
Phone: 334-844-5966 e-mail: hsubject@auburn.edu Web Address: http://www.auburn.edu/research/vprohs/index.htm

Complete this form using Adobe Acrobat Writer (versions 5.0 and greater).

1. PROPOSED DATES OF STUDY: FROM: 10/01/2007 TO: 09/30/2008

REVIEW TYPE (Check one): FULL BOARD EXPEDITED EXEMPT

2. PROJECT TITLE: Factors that Correlate with Employment for People who are Blind

3. J. Michael Jones Ph.D. Student RSED 3345012001 jonesj5@auburn.edu
 PRINCIPAL INVESTIGATOR TITLE DEPT PHONE E-MAIL
1228 Haley
 ADDRESS FOR CORRESPONDENCE FAX

4. SOURCE OF FUNDING SUPPORT: Not Applicable Internal External (External Agency): _____

5. STATUS OF FUNDING SUPPORT: Not Applicable Approved Pending Received

6. GENERAL RESEARCH PROJECT CHARACTERISTICS

A. Research Content Area	B. Research Methodology
<p>Please check all descriptors that best apply to this proposed research project.</p> <p><input type="checkbox"/> Anthropology <input type="checkbox"/> Anthropometry</p> <p><input type="checkbox"/> Biological Sciences <input type="checkbox"/> Behavioral Sciences</p> <p><input checked="" type="checkbox"/> Education <input type="checkbox"/> English</p> <p><input type="checkbox"/> History <input type="checkbox"/> Journalism</p> <p><input type="checkbox"/> Medical <input type="checkbox"/> Physiology</p> <p><input checked="" type="checkbox"/> Other (Please list): <u>vocational</u></p> <p>Please list 3 or 4 keywords to identify this research project: <u>Employment, blind, rehabilitation, factors</u></p>	<p>Please check all descriptors that best apply to the research methodology.</p> <p>Data collection will be: <input type="checkbox"/> Prospective <input checked="" type="checkbox"/> Retrospective <input type="checkbox"/> Both</p> <p>Data will be recorded so that participants can be directly or indirectly identified: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Data collection will involve the use of:</p> <p><input type="checkbox"/> Educational Tests (cognitive, diagnostic, aptitude, achievement)</p> <p><input type="checkbox"/> Surveys / Questionnaires</p> <p><input type="checkbox"/> Private Records / Files</p> <p><input type="checkbox"/> Interview / Observation</p> <p><input type="checkbox"/> Audiotaping and / or videotaping</p> <p><input type="checkbox"/> Physical / Physiologic Measurements or Specimens</p>
C. Participant Information	D. Risks to Participants
<p>Please check all descriptors that apply to the participant population.</p> <p><input checked="" type="checkbox"/> Males <input checked="" type="checkbox"/> Females</p> <p>Vulnerable Populations</p> <p><input type="checkbox"/> Pregnant Women <input type="checkbox"/> Children</p> <p><input type="checkbox"/> Prisoners <input type="checkbox"/> Adolescents</p> <p><input type="checkbox"/> Elderly <input checked="" type="checkbox"/> Physically Challenged</p> <p><input type="checkbox"/> Economically Challenged <input type="checkbox"/> Mentally Challenged</p> <p>Do you plan to recruit Auburn University Students? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Do you plan to compensate your participants? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Please identify all risks that may reasonably be expected as a result of participating in this research.</p> <p><input type="checkbox"/> Breach of Confidentiality <input type="checkbox"/> Coercion</p> <p><input type="checkbox"/> Deception <input type="checkbox"/> Physical</p> <p><input type="checkbox"/> Psychological <input type="checkbox"/> Social</p> <p><input checked="" type="checkbox"/> None <input type="checkbox"/> Other (please list): _____</p>

The Auburn University Institutional Review Board has approved this document for use from 9/26/07 to 9/25/08 protocol # 07-199 EX 0709



For OHSR Office Use Only

DATE RECEIVED IN OHSR: 9/21/07 by ZK16 PROTOCOL # 07-199 EX 0709

DATE OF OHSR CONTENT REVIEW: _____ by _____ DATE ASSIGNED IRB REVIEW: _____ by _____

DATE OF IRB REVIEW: REC 9/21/07 by PWR DATE IRB APPROVAL: 9/26/07 by IRB procedure

INTERVAL FOR CONTINUING REVIEW: 1 year - expires 9/25/08 45 CFR 46.101 (b)(4)

New

7. PROJECT ASSURANCES

PROJECT TITLE: Factors that Correlate with Employment for People who are Blind

A. PRINCIPAL INVESTIGATOR'S ASSURANCE

1. I certify that all information provided in this application is complete and correct.
2. I understand that, as Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance this project, the protection of the rights and welfare of human subjects, and strict adherence to any stipulations imposed by the Auburn University IRB.
3. I certify that all individuals involved with the conduct of this project are qualified to carry out their specified roles and responsibilities and are in compliance with Auburn University policies regarding the collection and analysis of the research data.
4. I agree to comply with all Auburn policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects, including, but not limited to the following:
 - a. Conducting the project by qualified personnel according to the approved protocol
 - b. Implementing no changes in the approved protocol or consent form without prior approval from the Office of Human Subjects Research (except in an emergency, if necessary to safeguard the well-being of human subjects)
 - c. Obtaining the legally effective informed consent from each participant or their legally responsible representative prior to their participation in this project using only the currently approved, stamped consent form
 - d. Promptly reporting significant adverse events and/or effects to the Office of Human Subjects Research in writing within 5 working days of the occurrence.
5. If I will be unavailable to direct this research personally, I will arrange for a co-investigator to assume direct responsibility in my absence. This person has been named as co-investigator in this application, or I will advise OHSR, by letter, in advance of such arrangements.
6. I agree to conduct this study only during the period approved by the Auburn University IRB.
7. I will prepare and submit a renewal request and supply all supporting documents to the Office of Human Subjects Research before the approval period has expired if it is necessary to continue the research project beyond the time period approved by the Auburn University IRB.
8. I will prepare and submit a final report upon completion of this research project.

J. Michael Jones
Principal Investigator (Please Print)


Principal Investigator's Signature

9/20/07
Date

B. FACULTY SPONSOR'S ASSURANCE

1. By my signature as sponsor on this research application, I certify that the student or guest investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accord with the approved protocol.
2. I certify that the project will be performed by qualified personnel according to the approved protocol using conventional or experimental methodology.
3. I agree to meet with the investigator on a regular basis to monitor study progress.
4. Should problems arise during the course of the study, I agree to be available, personally, to supervise the investigator in solving them.
5. I assure that the investigator will promptly report significant adverse events and/or effects to the OHSR in writing within 5 working days of the occurrence.
6. If I will be unavailable, I will arrange for an alternate faculty sponsor to assume responsibility during my absence, and I will advise the OHSR by letter of such arrangements.
7. I have read the protocol submitted for this project for content, clarity, and methodology.

Dr. Phil Browning
Faculty Sponsor (Please Print)

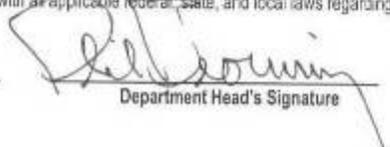

Faculty Sponsor's Signature

9/21/07
Date

C. DEPARTMENT HEAD'S ASSURANCE

By my signature as department head, I certify that every member of my department involved with the conduct of this research project will abide by all Auburn University policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection and ethical treatment of human participants.

Dr. Phil Browning
Department Head (Please Print)


Department Head's Signature

9/21/07
Date

8. **PROJECT ABSTRACT:** Prepare an abstract (400-word maximum) that includes: I.) A summary of relevant research findings leading to this research proposal; II.) A concise purpose statement; III.) A brief description of the methodology; IV.) Expected and/or possible outcomes, and V.) A statement regarding the potential significance of this research project. *Please cite relevant sources and include a "Reference List" as Appendix A.*

Abstract

1. Summary of relevant research findings: Researchers continue to find that persons with disabilities remain shamefully unemployed at a rate of 67% (Klinger, 2002), and unemployment for persons who are blind continues to remain in the 70% range (Wolffe, 2000; Moore, 2003). This finding includes those who are blind. Researchers have identified factors that correlate with a person who is blind and is obtaining competitive employment. Specifically, variables that are related to successful outcomes have been identified as (a) Age at the time of Referral, (b) Gender, (c) Race — White being a stronger indicator, and (d) Work status at the time of referral. The program factors that consistently indicated positive employment outcomes were: allowing the exploration of many employment goals, and the liberal spending on services.

2. Purpose: The purpose of this study is to identify relationships between the employment outcomes of people who are blind and (a) a select number of their demographic features, and (b) the nature and type of services they received from the Federal Rehabilitation program with four research questions. The results are intended to suggest factors that relate to a person becoming employed, especially those who are blind.

3. Methodology: The methodology and data analysis for this study used to address four research questions. For questions one and two, Logistic regression using SPSS will be employed to determine relationships between the independent and the dependent variables. Subsequently, a second step hierarchical logistic regression will be used to better define these relationships from the initial logistic regression. For questions three and four, multiple regression will be used to define the relationships between the dependent and independent variables. The use of multiple regression is necessary because of the change in the dependent variable from a categorical variable in questions one and two to a continuous variable in questions three and four.

4. Expected Outcomes: Hopefully, data analysis will reveal factors that lead to employment for people who are blind. These findings may suggest future strategies and best practices for serving people who are blind for the intent of employment.

5. Statement regarding potential significant: Citizens of the United States who are blind represent a very small segment of the overall population, estimated by a variety of sources at 1.5 million people. It is well known that these people have an unemployment rate of 75 percent or more. This study attempts to further examine the public program of Vocational Rehabilitation.

9. **PURPOSE & SIGNIFICANCE.**

- a. Clearly state all of the objectives, goals, or aims of this project.

To identify factors that correlate with employment for people who are blind by analyzing outcome data obtained from the federal public employment and training program, Vocational Rehabilitation.

- b. How will the results of this project be used? (e.g., Presentation? Publication? Thesis? Dissertation?)

Dissertation

10. KEY PERSONNEL INVOLVED WITH DATA COLLECTION. Identify each individual involved with the conduct of this project and describe his or her roles and responsibilities related to this project. Be as specific as possible.

Individual: J. Michael Jones Title: Ph.D Student Dept/ Affiliation: RSED

Roles / Responsibilities:

Principle investigator and author of independent study (dissertation).

Individual: Jennifer Bell Title: GTA Dept/ Affiliation: EFLT

Roles / Responsibilities:

dissertation committee member

Individual: David Shannon Title: Professor Dept/ Affiliation: EFLT

Roles / Responsibilities:

dissertation committee member

Individual: _____ Title: _____ Dept/ Affiliation: _____

Roles / Responsibilities:

Individual: _____ Title: _____ Dept/ Affiliation: _____

Roles / Responsibilities:

11. LOCATION OF RESEARCH. List all locations where data collection will take place. Be as specific as possible.

1228 Haley Center, Auburn University

12. PARTICIPANTS.

a. Describe the participant population you have chosen for this project.

Males and females, working age, and all races who are blind.

What is the minimum number of participants you need to validate the study? 50

What is the maximum number of participants you will include in the study? 2000

b. Describe the criteria established for participant selection. (If the participants can be classified as a "vulnerable" population, please describe additional safeguards that you will use to assure the ethical treatment of these individuals.)

People who have accessed the Public Rehabilitation Program, a federally-funded and administered employment and training system for people with disabilities, will be the participant selection population. Only data for those who are blind will be analyzed. <http://rsamis.ed.gov>

c. Describe all procedures you will use to recruit participants. Please include a copy of all flyers, advertisements, and scripts and label as Appendix B.

Participants will not be recruited. Existing, anonymous data will be obtained from the U.S. Department of Education, Office of Rehabilitation and Special Education.

What is the maximum number of potential participants you plan to recruit? na

d. Describe how you will determine group assignments (e.g., random assignment, independent characteristics, etc.).

No group assignments.

e. Describe the type and amount and method of compensation for participants.

No compensation provided.

13. **PROJECT DESIGN & METHODS.** Describe the procedures you will plan to use in order to address the aims of this study. (NOTE: Use language that would be understandable to a layperson. Without a complete description of all procedures, the Auburn University IRB will not be able to review protocol. If additional space is needed for #13, part b, save the information as a .pdf file and insert after page 6 of this form.)

a. **Project overview.** (Briefly describe the scientific design.)

Anonymous data will be obtained from the Rehabilitation Services Administration, U.S. Department of Education. A logistical regression with a hierarchical step paralleled with multiple regression will be used to analyze the data to discover relationships between government program services, and demographics to employment outcomes.

b. **Describe all procedures and methods used to address the purpose.**

1. Faxed a request to the Rehabilitation Services Administration to obtain "RSA-911" anonymous data set.
2. Data Set was received 08/07 on a disk.
3. Data will be analyzed as described previously.

- c. List all instruments used in data collection. (e.g., surveys, questionnaires, educational tests, data collection sheets, outline of interviews, scripts, audio and/or video methods etc.) Please include a copy of all data collection instruments that will be used in this project and label as Appendix C.

Anonymous data received from Rehabilitation Services Administration, U. S. Department of Education.

- d. Data Analysis: Explain how the data will be analyzed.

A logistical regression with a hierarchical step paralleled with multiple regression will be used to analyze the data.

14. RISKS & DISCOMFORTS: List and describe all of the reasonable risks that participants might encounter if they decide to participate in this research. If you are using deception in this study, please justify the use of deception and be sure to attach a copy of the debriefing form you plan to use and label as Appendix D.

There are no risks to participants since the data is existing public information. Further, data has already been made anonymous. Identifiers such as names, social security numbers, addresses, etc., have already been filtered out. As such, results will not include information that could potentially identify any participants.

15. PRECAUTIONS. Describe all precautions you have taken to eliminate or reduce risks that were listed in #14.

Again, there are no risks to participants since the data is existing public information. Further, data has already been made anonymous. Identifiers such as names, social security numbers, addresses, etc., have already been filtered out. As such, results will not include information that could potentially identify any participants.

16. BENEFITS.

a. List all realistic benefits participants can expect by participating in this study.

No benefits to participants.

b. List all realistic benefits for the general population that may be generated from this study.

Will suggest best practices for improving employment outcomes for people who are blind.

17. PROTECTION OF DATA.

a. Will data be collected as anonymous? Yes No *If "YES", go to part "g".*

b. Will data be collected as confidential? Yes No

c. If data is collected as confidential, how will the participants' data be coded or linked to identifying information?

d. Justify your need to code participants' data or link the data with identifying information.

e. Where will code lists be stored?

f. Will data collected as "confidential" be recorded and analyzed as "anonymous"? Yes No

g. Describe how the data will be stored (e.g., hard copy, audio cassette, electronic data, etc.), where the data will be stored, and how the location where data is stored will be secured in your absence.

Data will be stored on a single computer in the office of Jennifer Bell, in the Department of EFLT, in her office on the 4th floor.

h. Who will have access to participants' data?

J. Michael Jones, Jennifer Bell David Shannon, Phil Browning.

i. When is the latest date that the data will be retained?

September 30, 2008

j. How will the data be destroyed? (NOTE: Data recorded and analyzed as "anonymous" may be retained indefinitely.)

References

- Arnold, N., & Ipsen, C. (2005). Self-employment policies: changes through the decade. *Journal of Disability Policy Studies, 16*(4), 115-123.
- Beadles Jr., R., McDaniel, S., & Waters, S. (2000). Vocational outcomes of sensory impaired graduates of an adult vocational training program. *Journal of Visual Impairment & Blindness, 94*(5), 275-281.
- Becker Jr., H. (1998). An objective measurement system to assess employment. *Journal of Visual Impairment & Blindness, 92*(1), 80-85.
- Browning, P., Rhoades, C., & Crosson, A. (1980). *Advancing Your Citizenship*. Rehabilitation Research and Training Center in Mental Retardation University of Oregon Eugene, Oregon 97403
- Candela, A., & Wolffe, K. (2001). The employment consortium: An innovative approach to assisting blind and visually impaired people to find jobs. *Journal of Visual Impairment & Blindness, 95*(8), 494-497.
- Capella-McDonnall, M. (2005). Predictors of Competitive Employment for Blind and Visually Impaired Consumers of Vocational Rehabilitation Services. *Journal of Visual Impairment & Blindness, 99* (5), 303-315.
- Carney, N. (1990). 70 years of hope, 70 years of success. *American Rehabilitation, 16*(3), 1-3.
- Cavanaugh, B., & Rogers, P. (2002). Employment patterns of older workers with visual impairments. *Journal of Visual Impairment & Blindness, 96*(9), 655-659.
- Cohen, A., Timmons, J., & Fesko, S. (2005). The workforce investment act. *Journal of Disability Policy Studies, 15*(4), 221-230.

RSA Data-Use Agreement Form

Signed Form Rec'd _____

Name of Dataset: **RSA-911 and SSA Administrative Files Datalink**

Public- and/or restricted-use data collected and distributed by the Rehabilitation Services Administration may be used for statistical purposes only.

RSA does all it can to assure that the identity of data subjects cannot be disclosed. All direct identifiers, as well as any characteristics that might lead to identification, are omitted or modified in the dataset to protect the true characteristics of individuals. Any intentional identification or disclosure of a person violates the assurances of confidentiality given to the providers of the information. Therefore, users shall:

- Before accessing the data, read carefully and utilize the data-use documentation provided on the CD containing the dataset.
- Use the data in this dataset for statistical purposes only.
- Make no effort to determine the identity of any case reported through this database
- Make no use of the identity of any person or institution discovered inadvertently, and advise RSA of any such discovery.
- Not link this dataset with individually identifiable data from other RSA or non-RSA datasets.
- Notify RSA of errors you identify in the course of using the dataset and/or documentation.
- Not allow data CD to be duplicated for use by others who have not filed a Data-Use Agreement with RSA.
- Restrict analysis to only those research questions approved under the Data Request project description by both RSA and SSA.
- Return the CD and data to RSA by (*specify date*): _____

To proceed, you must signify that you understand and agree to comply with the above-stated requirements, by signing and dating this form, below.

Data-user's Signature _____ *Date* _____
 J. Michael Jones April 25, 2007

Print Name Here

Michael Jones

Mailing Address _____
 340 Shelton Mill Road Auburn AL, 36830

Phone Number _____
 (334) 501-2001

Email Address _____
 blindmike@charter.net

For Office Use Only --> Data CD sent on _____ by _____