The Efficacy of a Supported Employment Program Model

on the Employment of Individuals with Mental Handicaps

by

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(ABSTRACT)

The effects of the Supported Work Model program components on the job stabilization and the job maintenance (short term and long term employment, respectively) of individuals with mental handicaps were determined using path analysis. The subjects for this study were 295 consumers receiving supported employment (SE) services from 70 service agencies in Virginia placed in individual job settings between September 1, 1987 and July 1, 1989. The data were abstracted from a national SE data bank maintained by the Rehabilitation Research and Training Center (RRTC) of Virginia Commonwealth University. Separate path models were estimated for consumer job stabilization and consumer job maintenance.

Major contributors to job stabilization were on-the-job training and advocacy support. Transportation availability prior to placement and consumer participation in government benefit programs were identified as statistically significant background characteristics which enhanced job stabilization. Other background characteristics had no effects on job stabilization; however, they did influence the amount of training and advocacy support consumers required. Job maintenance was affected by the amount of on-going follow-along support consumers received as well as their employer's support for working with individuals who have handicaps. Background and job site character-

istics, as well as training/advocacy support, had no effect on job maintenance, but they did influence the amount of follow-along support consumers received.

These results suggest that the Supported Work Model is a good framework for providing services for individuals with mental handicaps. Service providers can improve consumer employment success by making consumer transportation arrangements prior to placement and by placing consumers with employers who are supportive of individuals with handicaps.

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There are those who suffered with me (or because of me?) as I endured "Dissertation Bondage." Until or unless one goes through the process, he or she cannot fully appreciate the all consuming nature of "growing" a dissertation.

Lastly, there are family members who survived the doctoral experience with me. My son Aaron struggled with wanting me to finish (because he wanted me out of school since I was too old) and not wanting me to finish (because he knew that being done meant I would be moving to another state). And my parents--my father who worried

enough that I did not have to worry and my mother who endured my father's worry. At last I can say, the deed is done!

Table of Contents

Chapter 1 ..... **1**

Introduction 1

Conceptual Framework 3

The Supported Work Model 4

Supported Employment Causal Models 8

Purpose Statement 16

Research Hypotheses 17

Limitations 18

Outcomes 20

Chapter 2 ..... **21**

Review of the Literature 21

Introduction 21

Early Years 22

Developmental Disabilities Act 24

Supported Employment Placement Models 25

Rehabilitation Research and Training Center 26

Recent Research 27

Chapter 3 ..... **34**

Methods 34

Introduction 34

Source of the Data 35

Definition and Coding of the Variables 37
Data Analysis 44
Estimating the Path Models 45

Chapter 4 . . . . . **47**
Results 47
Consumer Demographics 47
Correlations Among Variables 50
Path Models 53
Short Term Employment Models 54
Long Term Employment Models 60

Chapter 5 . . . . . **69**
Discussion 69
Introduction 69
Short Term Employment Model -- Job Stabilization 71
Long Term Supported Employment Model -- Job Maintenance 78
Summary and Conclusions 82
Recommendations 85
Additional Limitations 88

Reference List **90**

Appendix A. **99**

Appendix B. **121**

Vita **126**

List of Illustrations

Figure 1. Supported Work Model (after Wehman & Kregel, 1985) 6

Figure 2. Short Term Supported Employment Model 9

Figure 3. Long Term Supported Employment Model 10

List of Tables

Table 1. The skills used to measure "Job Match" and their source 39

Table 2. Background characteristics of first time consumers 49

Table 3. Pairwise correlations, means, and standard deviations for the short term employment models 51

Table 4. Pairwise correlations, means, and standard deviations for the long term employment models. 52

Table 5. Structural coefficients for proportional time short term employment model, standard form 55

Table 6. Direct, indirect, and total effects of variables in the proportional time short term employment model 56

Table 7. Structural coefficients for total time short term employment model, standard form 58

Table 8. Direct, indirect, and total effects of variables in the total time short term employment model, standard form 59

Table 9. Structural coefficients for proportional time long term employment model, standard form 62

Table 10. Direct, indirect, and total effects of variables in the proportional time long term employment model, standard form 63

Table 11. Structural coefficients for total time long term employment model, standard form 65

Table 12. Direct, indirect, and total effects of variables in the total time long term employment model, standard form 66

Chapter 1

Introduction

Supported employment programs are designed to provide "real" work opportunities for individuals traditionally excluded from such experiences (Kiernan & Schalock, 1989; McDonnell, Nofs, & Hardman, 1989; Wehman, 1988). They differ from traditional vocational services for the handicapped by offering consumers support services throughout their term of employment (Kregel & Wehman, 1989; Rusch & Hughes, 1989; Wehman & Moon, 1988). The efficacy of supported employment in improving the employment rate of individuals with handicaps is documented across a variety of programs in several states (Kiernan & Schalock, 1989; Wacker, Fromm-Steege, Berg, & Flynn, 1989). Successful programs are reported in Virginia (Wehman, Moon, Everson, & Barcus, 1988), Illinois (Rusch, 1986), Vermont (Vogelsberg, 1986), and Washington (Moss, Dinier, & Ford, 1986).

The Rehabilitation Research and Training Center (RRTC) of Virginia Commonwealth University in Richmond, Virginia, has sponsored supported employment programs since the late 1970s (Hill, Hill, et al., 1987; Wehman, 1988) and has served over 1500 consumers through over 70 service providers in Virginia. The success of pilot programs led to the development of the Supported Work Model of Competitive Employment for Individuals with Moderate and Severe Mental Handicaps (hereafter, Supported Work Model) (Wehman & Kregel, 1985).

Additional studies found that supported employment programs using the Supported Work Model increased the employment rate of individuals with mental handicaps in a cost effective manner (Hill, Banks, et al., 1987; Noble & Conley, 1987). Many of the individual program components have been studied extensively (Wehman, Kregel, Hill, & Shafer, 1987). Few studies, however, have examined the effects of multiple program components on employment outcomes (McDonnell et al., 1989; Schalock, McGauhey, & Kiernan, 1989; Trach & Rusch, 1989; Wacker et al., 1989). These studies showed that supported employment works, but they provided few insights as to why supported employment works (Wacker et al., 1989). Common to these studies was the failure to examine the total and indirect relationships among program components (Hunter, 1987; Trach & Rusch, 1989; Schalock et al., 1989). Some program components may have small direct effects on outcomes, but large indirect effects through intervening program components (Hunter, 1987).

Supported employment has become an important service model for individuals with handicaps (Kiernan & Schalock, 1989; Rusch & Hughes, 1989; Schalock et al., 1989; Wehman, 1988). Facing federal and state budgetary cutbacks and increased demands for services (DeStanfano & Snaufert, 1989; Wehman, 1988; Will, 1984a, 1984b), directors of supported employment programs may have to reduce or alter the services their agencies provide. If this is the case, it will be imperative that program directors have an empirical basis for making program revisions (Judd, 1987; Test, Grossi, & Keul, 1988).

Conceptual Framework

A goal of supported employment program directors is to modify their programs to achieve desired goals more efficiently and effectively (Judd, 1987; Test et al., 1988). Individuals who work with supported employment programs frequently ask, "Why do supported employment programs work?" Numerous attempts have been made to answer that question (Kiernan & Schalock, 1989; McLoughlin et al., 1988; Rusch, 1986; Wehman, 1981; Wehman et al., 1987). Most of these studies, however, either focused on single program components or lacked an explicit statement of a theoretical model of the program components (Halpern, in press; Polkosnik & Wisenbaker, 1986). Understanding supported employment has been further hindered by the lack of carefully defined and measured variables (Halpern, in press; McDonnell et al., 1989; Wacker et al., 1989).

Will (1984a, 1984b) believes that the evaluation of supported work and transitional programs should include all of the program components. Both Trach and Rusch (1989) and Schalock et al. (1989) recognized the complexity of explaining the impact of supported employment programs on consumer outcomes. Trach and Rusch (1989) suggested that "multiple regression analyses of various combinations of the program components and parts of the components with additional outcomes is (*sic*) needed" (p. 139). Schalock et al. (1989) recommend "that even more complex interactive models are probably necessary to explain individual and facility outcomes" (p. 89). This can be partly achieved by examining the causal relationships among the program components.

Causal modeling allows the evaluation of the theoretical relationships among variables by quantifying and testing the parameters suggested by a causal model (Keith, 1988; Wolfle, 1985). The analytical portion of causal modeling begins by defining the

hypothetical relationships among the variables, usually by use of a diagram (Judd, 1987; Keith, 1988; Wolfle, 1985). The statement of the causal relationships is known as the process model (Judd, 1987) or the path diagram (Wolfle, 1985). The development of the model forces the researcher to consider *a priori* the theoretical relationships among the variables and is considered to be the most important step in process evaluation (Judd, 1987) and causal modeling (Wolfle, 1985). The success of causal modeling depends on the proper specification of the model, as "... causal models are no better than the substantive ideas that go into them" (Wolfle, 1985, p. 407).

The researcher evaluates the model by estimating, decomposing, and testing the causal parameters suggested by the model. One is able to infer causal relations between the variables given proper specification of the model and certain theoretical assumptions (Asher, 1982; Davis, 1986; Kenny, 1979). In addition to the assumptions of multiple regression, causal modeling requires that the system being modeled be at a steady state (Asher, 1982; Kenny, 1979). Thus, causal modeling can provide a quantitative estimate of the impact of treatments on outcomes and an interpretation of these estimates in a substantively theoretical context (Judd, 1987; Wolfle, 1985).

The Supported Work Model

The Supported Work Model is different from other supported employment models and traditional vocational rehabilitation services in that Wehman and Kregel (1985) emphasize placing the consumer on the job prior to training, rather than the reverse (Bellamy et al., 1988; Kiernan & Stark, 1986; Rusch, 1986; Will, 1984a, 1984b). Success depends on making the best possible match between the consumer's skills and interests and the skill demands of the job, and on providing long-term support

(Vogelsberg, 1986; Wehman & Kregel, 1985). A strength of the Supported Work Model is the one-to-one relationship between the consumer and an employment specialist who operationalizes all components of the model (Sale et al., 1989; Wehman & Kregel, 1985).

The four components of the Supported Work Model are PLACEMENT, TRAINING/ADVOCACY, MONITORING, and FOLLOW-ALONG (Figure 1). PLACEMENT involves assessing consumer skills and job demands; matching consumer skills and factors such as consumer interest, family support, and transportation requirements to job demands; and placing the consumer in a job setting (Wehman & Kregel, 1985). Previous work experience by the consumer is a helpful, but not a necessary, prerequisite for placement. Successful placements have been made without prior work experience when there was suitable consumer interest in the job and long-term support from both the service provider and the consumer's family (Wehman & Kregel, 1985).

The second component of the model is TRAINING/ADVOCACY. Wehman and Kregel (1985) suggest that training follow placement because most pre-vocational training is ineffective. Individuals with moderate and severe handicaps have difficulty transferring and generalizing skills learned in non-job settings to job sites (Hasazi & Clark, 1989; Hupp, 1986; Rusch, 1986; Rusch & Mithuag, 1981). The need to transfer and generalize skills can be minimized, and cues for appropriate behaviors can be more easily learned, if the training occurs at the job site (Wehman & Kregel, 1985). An employment specialist develops the training program based on discrepancies in the consumer/job assessment to help the consumer gain the vocational skills necessary to maintain employment (McLoughlin et al., 1988; Moon, Goodall, Barcus, & Brooke, 1986 ; Sale et al., 1989).

While providing job training, the employment specialist also advocates on behalf of the consumer with the consumer's family, co-workers, and job supervisor. Advocacy is any non-instructional intervention on behalf of the consumer to facilitate the con-

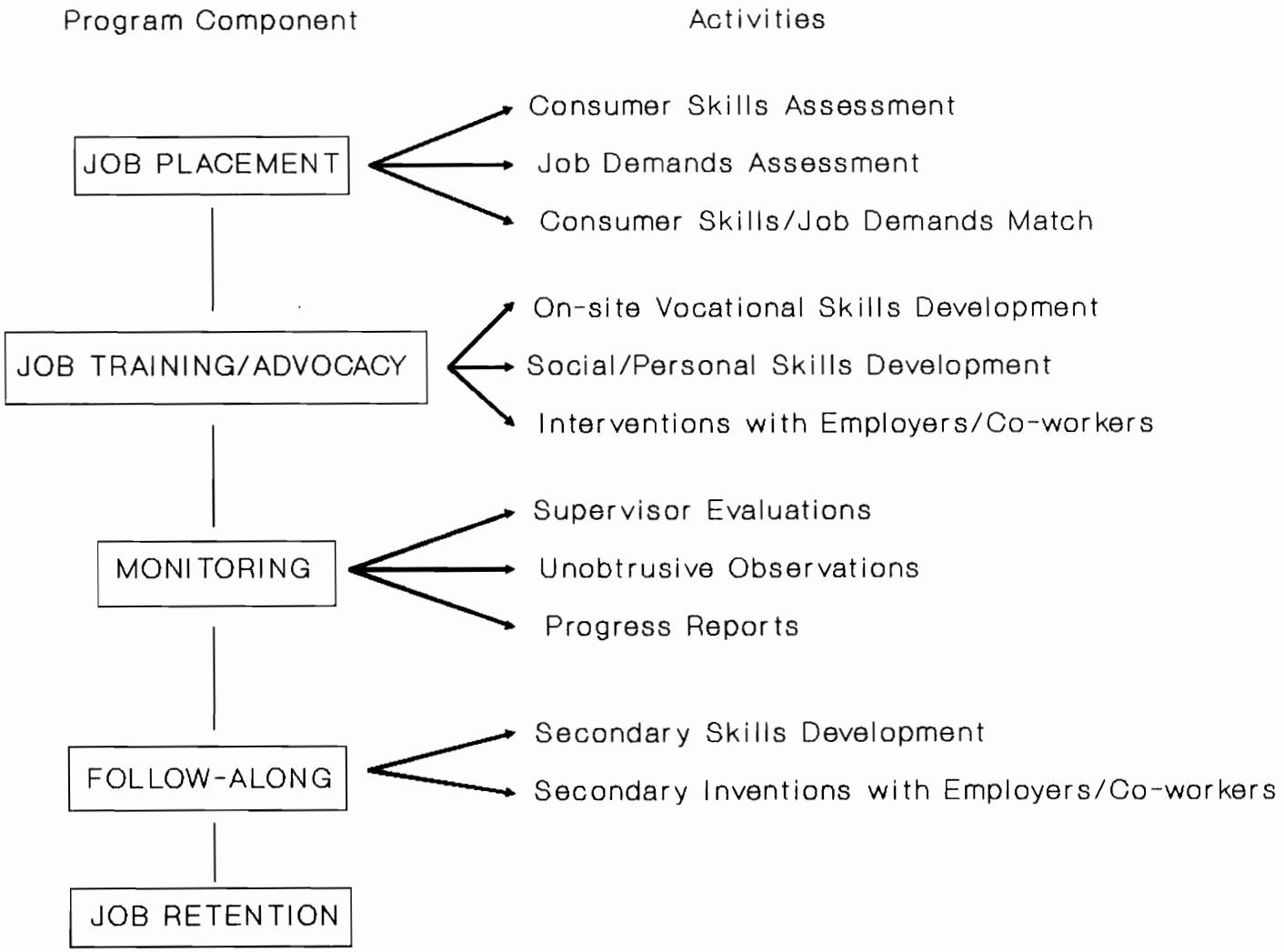

Figure 1. Supported Work Model (after Wehman & Kregel, 1985)

sumer's social adjustment to the workplace. It includes reassuring the family of the consumer's progress and benefit status, solving transportation problems, helping co-workers to understand handicaps, and training supervisors to work with handicapped employees (Sale et al., 1989). The employment specialist provides full-time training and advocacy support until the consumer is capable of independent work. At that time, the employment specialist fades from the job site and provides on-going support as needed (Hill, Hill, et al., 1987; Sale, et al., 1989; Wehman & Kregel, 1985). These first two components, PLACEMENT and TRAINING/ADVOCACY, are designed to stabilize the consumer on the job (Hill, Hill, et al., 1987).

MONITORING begins when the consumer is placed and the training has begun. Activities associated with monitoring include unobtrusive observations of the consumer, interviewing co-workers and family members, and reviewing written supervisor evaluations (Sale et al., 1989; Wehman & Kregel, 1985). Monitoring begins the long term support which distinguishes supported work from traditional vocational rehabilitation programs (Bellamy et al., 1988; Kiernan & Stark, 1986; Rusch, 1986; Will, 1984a).

The final component of the model is FOLLOW-ALONG. As problems are identified, the employment specialist develops an appropriate strategy to intervene on behalf of the consumer to prevent job termination (Sale et al., 1989). Problems need to be identified and overcome before they become irreversible and the consumer is terminated. Follow along activities may be as simple as a phone call or as complicated as consumer placement in a new job (Hill, Cleveland, Pendleton, & Wehman, 1982) and are thought to be essential for the continuing employment of consumers with moderate and severe handicaps. JOB RETENTION is achieved if the consumer remains employed for at least six months (Kregel et al., 1988).

The Supported Work Model is implemented in two phases (Hill, Hill, et al., 1987; Wehman & Moon, 1988). The first phase, job stabilization, consists of placing the

consumer on the job and providing the intensive training and advocacy services needed by the consumer to become established in the position (Hill, Hill, et al., 1987; Kiernan & Stark, 1986; Rusch, 1986). It is similar to traditional vocational rehabilitation services (Wehman & Moon, 1988). The second phase, job maintenance, involves providing the long term, on-going support needed by the consumer to retain employment (Hill, Hill, et al., 1987; Kregel & Wehman, 1989; Rusch & Hughes, 1989; Sale et al., 1989) and is unique among vocational services programs (Wehman & Moon, 1988).

Supported Employment Causal Models

The proposed causal models for short term and long term employment were block-recursive designs (Wolfle, 1980). Among the advantages of using a block design are being able to analyze a model without the complexity of nonrecursive (having reciprocating effects) variables and without having to specify a variable's unique place in a causal chain within a block (Davis, 1985).

The short term supported employment causal model (Figure 2) considers employment at eight weeks to be a function of a number of consumer background variables, family support, transportation availability, the match between the consumer and the job, level of social integration, employer support, and employment specialist's interventions (training and advocacy). There are five blocks of interest in the model: consumer background characteristics, job placement, job environment, job training/advocacy, and employment status at five weeks.

The long term supported employment causal model (Figure 3) considers employment at six months to be a function of certain consumer background characteristics, family support, transportation availability, the match between the consumer and the job,

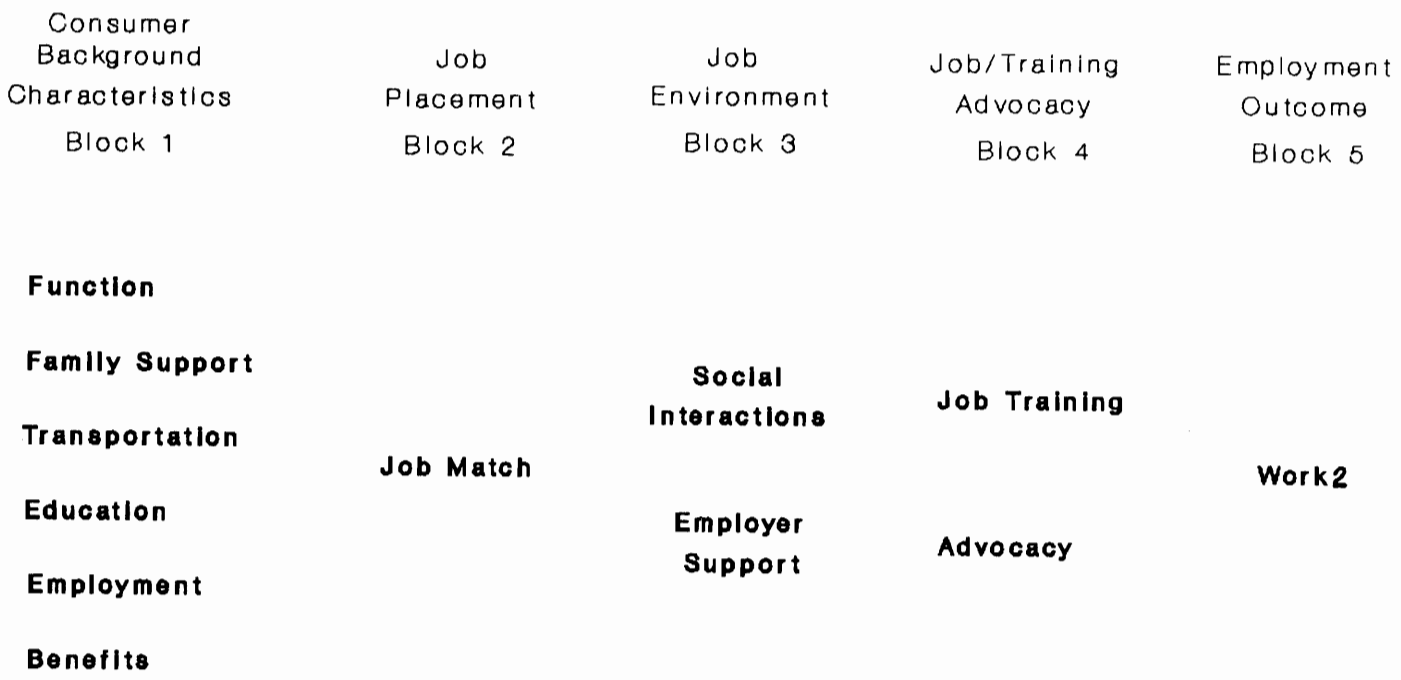

Figure 2. Short Term Supported Employment Model

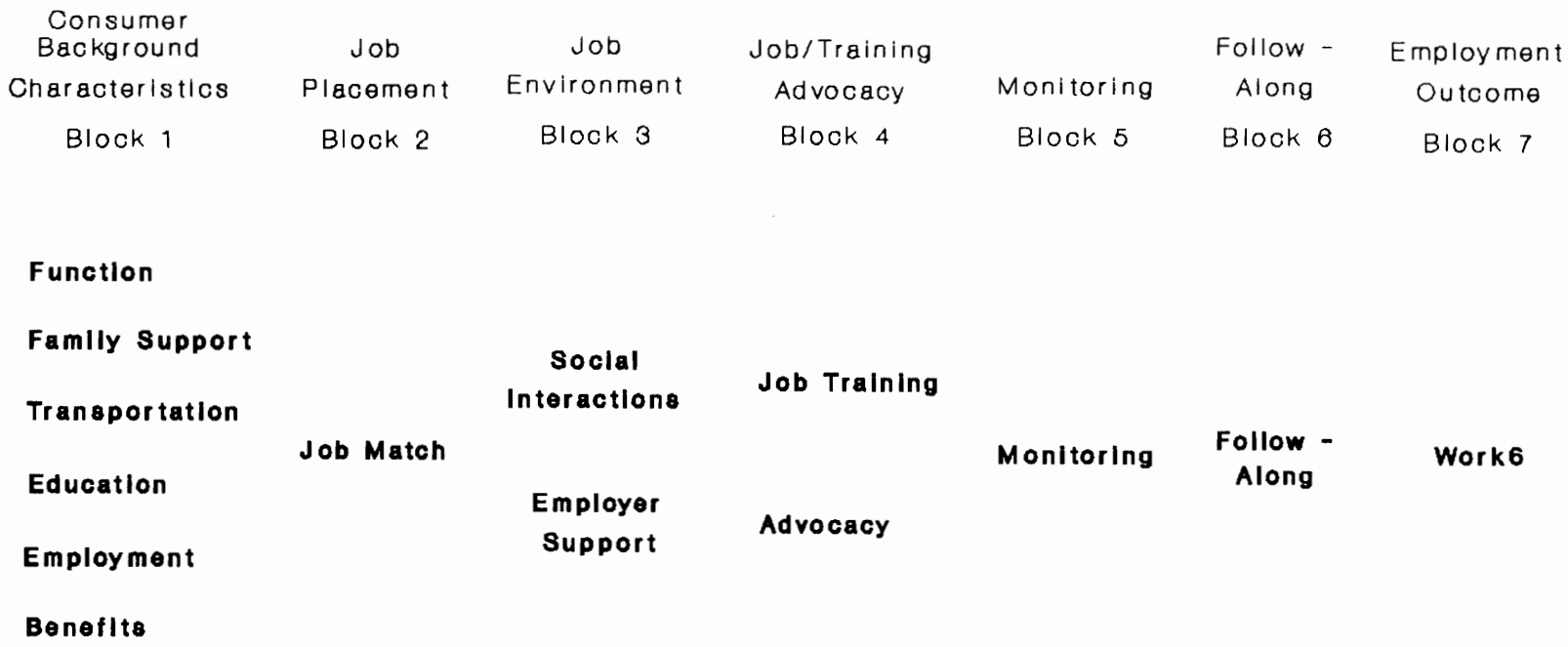

Figure 3. Long Term Supported Employment Model

level of social integration, employer support, employment specialist's interventions (training and advocacy), monitoring consumer's progress, and follow-up support. There are seven blocks of interest in the model: consumer background characteristics, job placement, job environment, job training/advocacy, monitoring, follow-up, and employment status at six months.

The variables of interest are shown in assumed causal order from left to right (Figures 2 & 3). All variables within a block influence all variables within subsequent blocks, with no assumed causal relationship among variables within a block.

Dependent Variables. Employment at eight weeks was chosen as the short term outcome because it represents the minimum time required for the consumer to be considered stable on the job. In the Supported Work Model, a consumer is considered stable if employment specialist intervention time falls below 20% of the time worked by the consumer for eight consecutive weeks (Hill, Hill, et al., 1987). At that time, the employment specialist begins fading from the job site, and begins follow-along services. The short term employment model was also developed because consumers not employed after eight weeks would not receive monitoring and follow-along services.

Employment at six months was chosen because persons with moderate and severe handicaps are typically placed in jobs which have high turnover rates (Kiernan & Stark, 1986; Rusch, 1986; Wehman, 1981), where the average length of employment for non-handicapped employees is 5 months (Kroger, 1979). Thus, if a consumer is able to exceed the average tenure of a non-handicapped person, the placement is considered successful.

Predetermined Variables. The consumer's level of functioning has been shown to inversely influence the degree of program implementation (Trach & Rusch, 1989) and a

number of employment outcomes (Schalock et al., 1989). Individuals with mild mental handicaps typically have little difficulty finding and maintaining competitive employment (Hasazi et al., 1985), and are often referred to as the "hidden handicapped" (Elder et al., 1986). Individuals with severe handicaps, however, are unable to hide their handicap and, despite efforts to provide employment opportunities, typically do not participate in competitive employment (McLoughlin et al., 1987; Sailor, Gee, Goetz, & Graham, 1988; Wehman et al., 1988). Therefore, consumer function level, was predicted to be positively related to advocacy, and negatively related to job training, monitoring, and follow-up.

One of the biggest obstacles for individuals with mental handicaps is the lack of family support (Karan & Knight, 1986; Kiernan & Stark, 1986; Kochany & Keller, 1981; Wehman, 1986, 1988). Family members can have tremendous influence on consumer behaviors and can provide many support services often overlooked by service providers (Bellamy et al., 1988). Two major predictors of integrated placements for individuals with mental handicaps are family support and community-based programs (Schalock, Harper, & Genung, 1981). The presence of family support was, therefore, predicted to be positively related to employment outcomes.

A major obstacle to successful consumer placement is transportation availability and accessibility (Kiernan, McGauhey, Schalock, & Rowland, *in press*, cited in Kiernan & Brinkman, 1988). If the consumer is unable to access transportation, it makes no difference whether or not jobs and high quality services are available (Kiernan & Brinkman, 1988; Wehman & Kregel, 1985). Transportation availability at the time of placement was thought to be positively related to short term employment, but to have no effects on long term employment.

Participation in special education classes (Hasazi et al., 1985) has been shown to increase participation in competitive employment. Shestakofsky, Van Gelder, and

Kiernan (1986) reported that their more successful placements were referrals from special education classes. Experiences in integrated settings, where individuals with handicaps either work along side of or train along side of individuals without handicaps, however, are thought to help the consumer develop social skills which would be helpful for gaining and maintaining employment (Wehman & Moon, 1988). Experience in an integrated educational setting was thought to negatively affect the other program components.

The value of work experience depends as much on where it occurs as it does on whether it occurs for many individuals with handicaps (Wehman et al., 1988). The primary work experience for many individuals with mental handicaps has either been in a day/work activity center or a sheltered workshop (Noble et al., 1986; Kiernan & Schalock, 1989). Because of numerous regulations, day/activity centers and sheltered workshops are prevented from providing meaningful vocational training (Bluestone, 1989; Whitehead, 1989). As a result, work and training opportunities are limited to pre-vocational and non-vocational activities (Elder et al., 1989). Hasazi et al. (1985) found that individuals with handicaps who had prior community-based work experience, including work study, were more likely to be employed than their peers who lacked such experience. The positive value of work and training experiences in community-based settings is widely reported (Bellamy et al., 1986; Brown et al., 1983; Horner & Bellamy, 1979; Pumpian, Shepard, & West, 1986; Schalock et al., 1989; Wehman, Kregel, & Barcus, 1985). Therefore, time spent working in community-based settings was thought to be negatively related to job training and indirectly related to job retention.

People work because they hope to be better off than if they do not work (Noble, Conley, & Elder, 1986). Many individuals with handicaps participate in a variety of government benefit programs, and consumers are widely thought to use those benefits as disincentives for seeking employment (Conley, Noble, & Elder, 1986; Kiernan & Schalock, 1989; Rusch, 1986; Wehman, 1981). Schalock et al. (1989) a found negative

relationship between wages earned and governmental benefits received by individuals with mental handicaps. Even though a number of measures have been enacted to minimize the impact of employment of government benefits (Bluestone, 1989; Conley & Noble, 1989; Conley et al., 1986), participating in benefit programs was predicted to reduce the likelihood that a consumer would be employed.

Placing a consumer in a competitive work environment involves many things. Common to supported employment models is assessing the person-environment fit or the goodness-of-fit between the consumer's skills and the demands of the work environment (Bellamy et al., 1988; Kiernan & Stark, 1986; McLoughlin et al., 1987; Rusch, 1986; Sale et al., 1989; Wehman et al., 1988). A perfect consumer/job match is not needed to ensure a successful placement; however, the greater the match, the less the training and advocacy intervention needed to ensure a successful placement (Wehman & Kregel, 1985). The consumer/job match was predicted to be inversely related to training and follow-up support, and positively related to job retention.

Job training and advocacy are major activities of employment specialists following placement (McLoughlin et al., 1987; Rusch et al., 1990; Sale et al., 1989; Wehman & Kregel, 1985). Job training is primarily designed to help the consumer gain the vocational skills needed for the job. Wehman and Kregel (1985) believe that the amount of job training is influenced by the consumer/job match, with more training needed for those with a lower match. The consumer's level of functioning (Schalock et al., 1989; Trach & Rusch, 1989; Wehman & Kregel, 1985) as well as past vocational and educational experiences (Wehman & Kregel, 1985) were thought to reduce the training needs of the consumer. The amount of job training was thought to positively influence short term employment and long term employment.

Advocacy is designed to facilitate the consumer's social adjustment to the work environment and to provide other non-vocational supports for the consumer

(McLoughlin et al., 1987; Rusch et al., 1989; Sale et al., 1989). Vogelsberg (1986) believes that as the consumer's level of functioning increases, more training will be devoted to non-vocational skills such as money and time management than vocational skills. Most job terminations for individuals with handicaps are the result of a lack of appropriate social rather than vocational skills (Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986). Also, increased advocacy time may be an indicator of the type and pattern of problems present on the job site (Sale et al., 1989). Consumer level of function, parental support, employer support, and prior competitive work experience were believed to reduce the amount of advocacy support required by a consumer. Advocacy was expected to have a positive effect on short term employment and on long term employment.

The effects of employer support on the employment success of individuals with handicaps has not been studied. Employment specialists are cautioned against "forcing" employers to hire individuals with handicaps (Kiernan & Schalock, 1989; Moon et al., 1986; Wehman & Moon, 1988). The decision to retain an employee often rest solely with the employer. P. Sale (personal communication) suggests that employer support is one of the major factors contributing to consumer employment success. It is not unusual for successful placements to fail when there is a change of employers or job-site supervisors. Employers supportive of workers with handicaps were thought to increase consumer employment.

Work in an integrated setting is one of the key requirements of supported employment programs (Federal Register, 1987). An integrated work setting increases the opportunity for co-workers to serve as role-models for the consumer and to enhance the social integration of the consumer (Bacon & Crimmins, 1989; Stainback, Stainback, Nietupski, & Hamre-Nietupski, 1986). Successful integration into the work place can reduce the time the employment specialist spends with the consumer (Sale et al., 1989)

through the informal use of co-workers as support agents (Nisbet & Hagner, 1988; Rusch, Johnson, & Hughes, 1990). The opportunity to interact with non-disabled persons on the job was predicted to decrease training, advocacy, monitoring, and follow-along activities, and to increase the likelihood of short term and long term employment.

The goal of the monitoring program is to identify problems before they lead to consumer job termination (Bellamy, Rhodes, Mank, & Albin, 1988; McLoughlin et al., 1987; Sale et al., 1989). The amount of time spent monitoring consumer progress, therefore, was believed to be positively related to employment outcomes.

Traditional vocational rehabilitation programs provide limited follow-up support for consumers (Bellamy et al., 1988; Kiernan & Stark, 1986; McLoughlin et al., 1987; Wehman et al., 1988). Supported employment is designed to provide long term support for individuals who, because of their handicap, would not be able to participate in competitive work (Wehman et al., 1988). Thus, follow-along support was predicted to have a positive effect on employment.

Purpose Statement

The purpose of this study was to determine the effects of the components of the Supported Work Model (Wehman & Kregel, 1985) on short term (job stabilization) and long term (job maintenance) employment of individuals with mental handicaps in Virginia using causal modeling. More specifically, the study examined the relative contributions of the components of the Supported Work Model (Wehman & Kregel, 1985) to the job retention of individuals with mental handicaps eight weeks (job stabilization) and six months (job maintenance) after being placed in their first supported employment job in an individual job setting. Subjects for this study were consumers receiving services

from agencies in Virginia associated with the RRTC and which used the Supported Work Model as the basis for their services.

The study was designed to determine the effects of Supported Work Model programs components on consumer employment using the consumer and job information available to service providers. The best way to understand how or why a program works when using models is to mimic, as closely as possible, the process being studied. Therefore, programs components and consumer/job site characteristics were operationalized using the same procedures and measures available to employment specialists whenever possible.

The theoretical model used in this study, the Supported Work Model, was developed by supported employment practitioners to guide service agencies when providing supported employment services (Wehman & Kregel, 1985). Programs, however, are not conducted in vacuums. Consumer background and job site characteristics can influence program implementation and consumer outcomes and should be included in path models being used to determine program effects. The consumer background and job site characteristics in the models estimated in this study were included because other investigators have found relationships between the characteristics and program components or consumer outcomes.

Research Hypotheses

The hypotheses for this study were:

- Training and advocacy will have direct and/or total effects on consumer employment at eight weeks (short term employment);

- Evaluation and follow-along support will be the only program components having direct effects on consumer employment at six months (long term employment);
- Placement, training, and advocacy will have only indirect effects, if any, on long term employment; and
- Consumer background characteristics and job site characteristics will only have indirect effects on either short term or long term employment, but they will have direct and/or indirect effects on individual program components.

Limitations

There are a number of limitations to working with a single program or model. The external validity is reduced (Huck, Cormier, & Bounds, 1974). The results of the study, at best, can only be applied to consumers or programs using the Supported Work Model in Virginia. The generalizability of the study is further limited to those individuals with mental handicaps referred for services. Lastly, the consumers are individuals who are no longer entitled to educational services under P. L. 94-142 because of age. This study is also limited to consumers in their first job. Their reason for being unemployed may be movement to another position rather than their movement out of the workforce.

There are some possible problems associated with internal validity (Huck et al., 1974). A number of cases were lost due to incomplete data. Because of missing data, the consumers used to estimate the model parameters may not be representative of the population reducing the generalizability of the study. Lost cases may come from programs failing to implement the model fully, failing to report the data on a timely basis, or doing other things which may influence the effectiveness of the Supported Work

Model. If the missing cases were due to non-random causes, the effects estimated may be biased. The data were collected by a large number of individuals with varying degrees of training and experience. Even though efforts were made to ensure maximum reliability for the data (Kregel et al., 1988; Moon et al., 1986), inter-observer consistency cannot be assured. The data collection forms and procedures have evolved over time and may not be consistent across consumers and programs.

The measures for the variables included in the model were selected from those available in the data set. The process of finding existing measures for given constructs, "creative variable operationalization" (Kiecolt & Nathan, 1985, p. 53), may result in biased or improper measures of the constructs and variables used in the models (Huck et al., 1974; Kiecolt & Nathan, 1985; Stewart, 1984). Lacking appropriate controls, randomization, and imprecise measures of the variables, cause may only be inferred from the model, not proven (Asher, 1983; Kiecolt & Nathan, 1985; Pedhazur, 1982). The observed outcomes and processes may be due to some other factor other than those included in the model since the study is non-experimental in nature (Cooley, 1978).

The estimation and testing of the causal models cannot confirm "true" causal relationships; they can only be used to disconfirm false causal relationships (Judd, 1987; Keith, 1988; Kenny, 1979; Wolfle, 1985). The model for both short term and long term supported employment may be only one of several competing models which fit the data (Judd, 1987; Keith, 1988; Kenny, 1979). Additional research would be needed to better understand "true" causal relations (Judd, 1987). This study only examined employment outcomes. There are a number of psychological and sociological outcomes which may be of equal or greater benefit to the consumer not examined in this study (Halpern, 1985, in press).

Outcomes

The outcomes of this study are:

- Increased understanding of the theoretical framework for the Supported Work Model;
- Increased understanding of the effects of consumer characteristics on the application of the Supported Work Model;
- Recommendations to modify supported employment programs using the Supported Work Model to increase their overall efficacy based on empirical studies (Judd, 1987; Test et al., 1988); and
- Application of a methodology not previously used in the evaluations of supported employment programs. This methodology can better answer questions regarding program effectiveness because it relies on the explicit statement of causal relationships among consumer characteristics, program components, and employment outcomes; and it allows one to estimate direct, indirect, and total effects of consumer background and job site characteristics on program components and consumer outcomes, as well as the effects of program components on one another and consumer outcomes.

Chapter 2

Review of the Literature

Introduction

Work provides many opportunities in addition to income. It affords individuals the chance to broaden their social lives, to improve their self-concept, and to enhance their self-worth (Brolin, 1976; Flexer, 1983; Will, 1984a). A person's worth in today's society is determined by his or her ability to work (Bluestone, 1989; Harris, 1987; Kiernan, Schalock, & Knutson, 1989; Wehman, 1981). William O. Douglas in the dissenting opinion for *Bosky v. Regents* wrote, "The American ideal was stated by Emerson in his essay on politics, 'A man has a right to be employed, to be trusted, to be loved, to be revered.' It does many men little good to stay alive and free and propertied if they cannot work."

For many individuals with mental handicaps the American ideal of Emerson is little more than a dream. Though estimates vary, most individuals with mental handicaps are either unemployed or, at best, underemployed (Hasazi et al., 1985; Mithuag, Horiuchi, & Fanning, 1985; Kiernan, McGauhey, & Schalock, 1988). Among the many reasons for the high unemployment/underemployment (Bernstein & Karan, 1979; Kiernan & Stark, 1986; Trach & Rusch, 1989; Rusch, 1986; Wehman, 1988) is the

widespread belief among families, friends, and service providers that moderately and severely handicapped individuals are incapable of learning necessary employment skills (Elder et al., 1986; Bellamy et al., 1986; Halpern, 1985; Will, 1984a; Williams, 1981). There is, however, considerable evidence that individuals with moderate and severe handicaps are capable of learning the necessary skills to obtain and maintain competitive employment (Bellamy, Rhodes, Mank, & Albin, 1988; Gold, 1973; Kiernan & Stark, 1986; Kraus & MacEachron, 1982; Rusch, 1986; Wehman, 1981).

Early Years

Prior to 1973, individuals with handicaps were typically excluded from receiving vocational rehabilitation services because they were considered unemployable (Kiernan & Schalock, 1989; Rusch, 1986; Wehman, 1981). The Rehabilitation Act of 1973, however, mandated that time-limited vocational rehabilitation services be available to individuals with severe disabilities (Goodall, Wehman, & Cleveland, 1983). Even though this opened the door for individuals with handicaps, many were still considered unemployable according to the assessment procedures used by service providers (Kiernan & Schalock, 1989).

The cause of competitive employment for individuals with moderate and severe handicaps was championed by Will (1984a). Her articulate statement for a national initiative for handicapped services was based on the passage and implementation of the Education for All Handicapped Children Act (P. L. 94-142), the ever rising costs of programming and joblessness among the handicapped, and the evidence that the moderately and severely handicapped can learn employment skills. The parents of children with handicaps have come to expect comprehensive services for their children and to

have higher expectations for their children (Bellamy et al., 1988; Bellamy, Rhodes, & Albin, 1986). Many of these children are now or will soon exhaust their educational entitlement. Upon leaving school they will find that few vocational opportunities are available for individuals with moderate and severe handicaps. Many of the existing services have long waiting lists (Bellamy et al., 1986; Wehman, 1988; Will, 1984a). Because of federal and state regulations, many agencies providing handicapped services are unable to offer vocational training (Bellamy et al., 1986; Elder et al., 1986; Will, 1984a).

Gaining access to the vocational service system does not guarantee the opportunity to enter competitive employment. The typical sequence of vocational services for individuals with handicaps is day activity centers, work activity centers, sheltered workshops, and then competitive employment. This system is, at best, minimally effective. The vocational service system for individuals with handicaps was designed to provide protected, paid employment, not to move them into positions of competitive employment (Hill, Hill, et al., 1987). This philosophical orientation may explain why a consumer entering a day activity center will spend an estimated 47 to 56 years in the service system prior to becoming competitively employed (Bellamy, Rhodes, Bourbeau, & Mank, 1986). Consumers not placed in competitive employment during their first few months in a sheltered workshop are unlikely to ever acquire competitive employment (Moss, 1979).

Most individuals with moderate and severe handicaps are denied traditional vocational rehabilitation services because they are considered unemployable (Bellamy et al., 1988; McLoughlin et al., 1987; Kiernan & Stark, 1986; Wehman & Moon, 1988). The few vocational programs that exist for the handicapped receive limited funding, and must choose between providing limited services for all eligible individuals or full services for a select few (Bluestone, 1989; DeStafano & Snauwaert, 1989; Wehman, 1988). Even though federal legislation (Developmental Disabilities Act of 1984, P. L. 98-527) man-

dates equal access to vocational services leading to competitive employment for all individuals with moderate and severe handicaps, service agencies must balance providing the more costly services for the severely handicapped with the need to help those less handicapped (DeStafano & Snauwaert, 1989; Whitehead, 1989).

Developmental Disabilities Act

The success of pilot programs (Rusch & Hughes, 1989) and numerous reports on the failure of the existing service system for individuals with handicaps (Elder et al., 1986; Greenleigh Associates, Inc., 1975; U. S. Department of Labor, 1979; Whitehead, 1979) led to the passage of the Developmental Disabilities Act of 1984 (P. L. 98-527). This Act provided the legislative mandate for providing vocational services to individuals who were normally excluded from services because of their perceived "unemployability". The Act established three criteria which defined supported employment as paid employment:

1. for persons with developmental disabilities who, because of their disability, are unlikely to gain competitive employment without on-going support;
2. conducted in a variety of settings where persons without disabilities are employed; and
3. supported by *any* activity necessary to maintain employment.

The Rehabilitation Act Amendments of 1986 (P. L. 99-506) established regulations for supported employment providers and further defined supported employment as competitive employment in an integrated setting for individuals with severe handicaps who could not otherwise attain and maintain employment without intensive, on-going

support (Rusch & Hughes, 1989). According to the regulations, the person with handicaps should:

1. work a minimum of 20 hours per week for at least minimum wage (competitive employment);
2. work in groups of no more than eight individuals with handicaps with regular contact with non-handicapped individuals (integrated setting); and
3. receive on-going support services (on-going support).

Supported Employment Placement Models

The regulations governing supported employment provide considerable flexibility regarding the type of service programs an agency can offer. The four major service models which have emerged are:

1. Supported jobs (Individual placement) -- Individual consumer placed in a conventional, community-based job with support services provided as needed by an employment specialist (Wehman & Moon, 1988);
2. Enclave (Clustered employment) -- A group of no more than eight individuals with handicaps working in close proximity, usually performing the same task, within a community-based business; support is usually continuous and provided by an employment specialist hired by an independent service provider (Bellamy et al., 1988);
3. Mobile work crew -- A group of eight or fewer individuals with handicaps who provide a specialized service at a variety of locations within a community on a contractual basis; support is usually continuous and provided by an on-site employment specialist hired by an independent service agency (Mank et al., 1986); and

4. Benchwork (Entrepreneurial) -- Typically a small group of eight or fewer individuals with handicaps working in a specialized company which makes a product or provides a service for a larger manufacturing company; support is provided by a person working on-site hired by a service agency and usually serves individuals with the most severe handicaps requiring intensive, continuous support (Rusch & Hughes, 1989).

Rehabilitation Research and Training Center

A number of programs were initiated during the late 1970s and early 1980s to place individuals with handicaps into competitive employment. Will (1984a, 1984b) and others (Bellamy et al., 1988; Kiernan & Stark, 1986; Rusch, 1986; Wehman, 1981) believe that successful competitive employment is possible for individuals with moderate and severe handicaps if on-going support is provided in integrated work settings (where the consumer works alongside non-handicapped employees), and wages are the federal minimum or higher. The general model used in each of these programs includes components for assessment, training, placement, and follow-up (Kiernan & Stark, 1986; Schalock et al., 1989; Trach & Rusch, 1989; Wehman, 1988).

One of the early supported employment programs was developed by Wehman and his co-workers at Virginia Commonwealth University (Wehman, 1981, 1986, 1988). The success of pilot programs in Virginia such as Project Employability (Wehman, Hill, & Koehler, 1979) led to the development of the Supported Work Model of Competitive Employment for Individuals with Moderate and Severe Handicaps (hereafter, Supported Work Model) (Wehman & Kregel, 1985) and to the establishment of the Rehabilitation Research and Training Center (RRTC) at Virginia Commonwealth University in 1983

(Hill, Hill, et al., 1987). A year later, RRTC was recognized as a vendor for time-limited training services and job-based training programs for individuals with handicaps by the Virginia Department of Rehabilitative Services. RRTC has worked with a number of community service boards to facilitate the delivery of long-term follow-up and job maintenance services (Hill, Hill, et al., 1987). The RRTC has expanded its programming efforts throughout Virginia and the United States by providing training and technical support to service agencies interested in providing supported employment opportunities for their consumers (Moon et al., 1986; Wehman, 1988). Unlike many supported employment programs, one goal of the program is to provide competitive work for all consumers (Wehman, 1988). Follow-up studies have shown that supported employment programs increase the employment rate of individuals with moderate and severe handicaps in a cost effective manner (Hill, Banks, et al., 1987; Noble & Conley, 1987).

Recent Research

The success of supported employment programs for the moderately and severely handicapped (Bellamy et al., 1988; Kiernan & Stark, 1986; Rusch, 1986; Vogelsberg, 1986; Wehman et al., 1988) has resulted in the widespread implementation of supported employment programs (Wehman, 1988). A major concern is: What makes supported employment programs work? One objective of the Office of Special Education and Rehabilitative Services (OSERS) supported employment initiative was to determine those factors which contribute to program success (Will, 1984b). Numerous studies have identified the characteristics of successful consumers (Hill, Wehman, Kregel, Banks, & Metzer, 1987; Hudson, Schwatz, Sealander, Campbell, & Hensel, 1988; Schalock, 1989) and the role of individual program components (Bellamy et al., 1988; Kiernan &

Schalock, 1989; Kiernan & Stark, 1986; Kregel, Hill, & Banks, 1988; Rusch, 1986). Few studies, however, have examined the impact of all the program components on employment outcomes.

Trach and Rusch (1989) examined the relationship between the degree of program implementation for the five major components of supported employment programs (based on the work of Rusch (1983), Wehman and Kregel (1985), and Vogelsberg (1986)) and several employment outcomes for 33 service agencies in Illinois. The outcome variables they selected were: level of worker functioning (measured by consumer's IQ), hourly and monthly wages, and hours of job development. All consumer variables were measured as agency means rather than values for individual consumers. The level of consumer functioning and the hours of job development are unlikely outcomes as they occur before the implementation of the program, as Trach and Rusch (1989) imply. As outcomes they violate one of the assumptions of causality, "*after cannot cause before...*" (Davis, 1985, p. 10). Therefore, Trach and Rusch (1989) were both examining the effects of program implementation on selected outcomes (wages) and the effects of selected variables (consumer's IQ and job development) on program implementation. They found that increased consumer functioning decreased the degree of program implementation. Job development had a positive relationship with the degree of implementation for all program components. Program implementation had a negative impact on wages earned. Trach and Rusch (1989) concluded that the relationship between program implementation and wages may be confounded by the effects of consumer's level of functioning, with lower functioning consumers requiring more program services. Trach and Rusch (1989) were unable to examine the combined effects of the program components on one another and on the employment outcomes because of the method they chose.

Schalock et al. (1989) examined the effects of several individual consumer and facility characteristics on a number of consumer outcomes using stepwise regression procedures. They surveyed facilities across the country that placed developmentally disabled adults in supported or competitive employment and/or provided sheltered work opportunities. They regressed each of their outcome variables (supported employment (SE) rate, competitive employment (CE) rate, SE retention rate, CE retention rate, average hourly wage, average number of hours worked in nonsheltered employment, level of integration, and impact of working on Supplemental Security Income (SSI) and Social Security Disability Income (SSDI) payments) on individual consumer and facility characteristics. Using data from two separate years, they found no consistent patterns across years in explaining the observed outcomes. This may be due to the inclusion of several new variables in the second year analyses, suggesting the first year's model was misspecified. Use of a misspecified model is one of the more serious errors in regression studies (Asher, 1983; Kenny, 1979; Pedhazur, 1982).

Schalock et al. (1989) found that higher functioning consumers (based on IQ) worked longer and for higher wages than their lower functioning colleagues. Facility characteristics having significant effects on employment outcomes included the amount of support provided and the type of vocational placements (transitional, supported, or competitive) made by the facility. The level of integration was negatively related to the number of hours of job support. The importance of an integrated work place in ensuring successful employment outcomes for individuals with handicaps has been reported elsewhere (McLoughlin et al. 1987; Wehman et al., 1988). Two large scale environmental factors impacting outcomes were the geographical location of the service facility (rural or urban) and the state's general unemployment rate. Stark and Goldsbury (1988) and others (McLoughlin et al., 1988; Wehman et al., 1988) also found that the success of supported employment programs was negatively related to the local unemployment rate.

Characteristics associated with working in integrated environments included being competitively employed, having prior non-sheltered employment, living in an urban area of a state with low unemployment, and receiving limited support from the service provider. Schalock et al. (1989) were not able to look at the total and indirect effects of the program components on one another and the outcomes. Stepwise regression is a useful tool for determining those variables which contribute most to the observed variation in the dependent variable, but it may do little to help understand substantive theory (Polkosnik & Wisenbaker, 1986).

McDonnell et al. (1989) regressed several employment outcomes on the degree of implementation of several program components. They found that the development of an individualized program plan outlining the employment goals for each consumer was significantly related to each of the outcome variables (weekly averages for number of hours worked and wages, job retention (number of calendar days worked), and level of job site integration). Determining the match between consumer skills and the job demands had a direct effect on the conditions under which the consumer worked (average wages and hours, level of integration) but not on the long term employment of the consumer. Job retention was influenced more by structural characteristics of the agency providing the service than by direct activities provided by the agency for the consumer. Both the existence of a service contract (a plan for follow-up and maintenance services) and weekly staff meetings (where the staff discussed consumer progress, engaged in professional development, and performed necessary administrative duties) contributed to consumer job retention. The consumer's residential setting and transportation arrangements were positively correlated with outcomes. The consumer's IQ was only marginally related to outcomes, contrary to the findings of Trach and Rusch (1989) and Schalock et al. (1989).

Wacker et al. (1989) found that the presence of a consumer advocate (typically a co-worker), consistent follow-up, and job related social and communication skills training (collateral skills training) were associated with consumer job success. Even though their results are in basic agreement with other studies, the validity of their results is questionable because of poorly defined variables and statistical analyses. Wacker et al. (1989) describe their statistical design as a "between groups (successful or unsuccessful) chi-square comparison ... to compare the two groups based on each independent variable (presence or absence)" (Wacker et al., 1989, p. 431). Later, they define their dependent variable, job retention, as the number of months the consumer worked for pay. Thus it is difficult to determine what their criterion is for consumer success in the program. If the job retention was defined as a continuous variable, as suggested, multiple regression might have been more appropriate analysis for this study and would have provided more information regarding the relationship between the program components and the employment outcomes. This is a case where the results may reflect more the methodology rather than the phenomena being studied (Shotland & Mark, 1987). Wacker et al. (1989) suggest that their study, as well as others related to supported employment, were limited by imprecise definitions and, therefore, imprecise measures of program components and outcomes.

The investigators in each of these studies examined the relationship between a number of program components and employment outcomes. Even though there are several program components which are identified as important determinants of outcomes in all the studies, generalizability across the studies is weakened by the lack of a common unit of analysis, imprecise definitions of variables, and the lack of a common theoretical framework. By changing the unit of analysis across studies, the researchers influence the way in which they are able to interpret their results, primarily because they simultaneously change their precise research question (Shotland & Mark, 1987). Be-

sides, factors which influence groups may not be the same as those which influence individuals. Halpern (in press) was frustrated in his attempt to compare the results of transitional studies because of the lack of conformity and clarity in the conceptualization and measurement of outcome variables. He called for standardizing variable definitions, but at the same time recognized that the state of the art in special education may not yet have reached the point where such a plan is practical.

Most supported employment studies suffer from the lack of an underlying theoretical framework. Schalock et al. (1989), using stepwise regression analysis, selected their variables using statistical rather than substantive criteria (Polkosnik & Wisenbaker, 1986). McDonnell et al. (1989) avoided some of the theoretical shortcomings of stepwise regression analysis by using standard multiple regression. Standard multiple regression is limited in that only the direct relationships between variables can be examined, overlooking potential cumulative and indirect effects of variables (Polkosnik & Wisenbaker, 1986). Occasionally there are variables which have little or no direct effects on a variable, but which can have large effects on that same variable through intervening variables (Hunter, 1987).

Trach and Rusch (1989) studied the effects of facility characteristics on mean employment outcomes for consumers using that service facility -- measuring facility rather than consumer success. Schalock et al. (1989), McDonnell et al. (1989), and Wacker et al. (1989), on the other hand, examined factors influencing employment outcomes for individuals as well as factors influencing the success of service facilities.

The primary purpose of vocational services is to help individuals with handicaps gain and maintain employment (Kiernan & Schalock, 1989; Kiernan & Stark, 1986; Rusch, 1986; Wehman, 1981; Will, 1984a, 1984b). A number of studies have been conducted to better understand the effects of supported employment on a variety of consumer employment outcomes. Even so, after reviewing these many studies, like Wacker

et al. (1989), one is forced to conclude that the question still remains, "Why does supported employment work?"

Chapter 3

Methods

Introduction

Supported employment has become one of the major service models for individuals with moderate and severe handicaps (Kiernan & Schalock, 1989; Kregel & Wehman, 1989; Rusch & Hughes, 1989). Yet, little is known about how/why supported employment programs work (Schalock et al., 1989; Trach & Rusch, 1989). The Supported Work Model (Wehman & Kregel, 1985) was presented as a theoretical model for providing vocational services to individuals with handicaps. To date, numerous studies have been conducted to better understand individual components of the model and the overall efficacy of the model (Wehman et al., 1987). Few studies have examined the effects of consumer and job site characteristics on program components and consumer outcomes and the effects of program components on one another and on consumer outcomes.

Services provided according to the Supported Work Model occur in two phases, a period of initial, intense training (job stabilization) and a period of on-going follow-along services (job maintenance) (Hill, Hill, et al., 1987; Kregel et al., 1988). The purpose of this study was to determine the effects of the program components of the Supported Work Model on each other and on the short term (eight week) and long term

(six month) employment of consumers with mental retardation using path analysis. The source and coding of the data, as well as the analytical procedures, are described below.

Source of the Data

The Rehabilitation Research and Training Center (RRTC) at Virginia Commonwealth University, Richmond, Virginia, maintains a national supported employment data bank (Wehman, 1988). Participating service agencies send detailed information on individual consumers to the RRTC on a regular basis (Rehabilitation Research and Training Center, 1987; hereafter, RRTC, 1987). The purpose of the data bank is to help service providers, funding agencies, and other concerned parties evaluate the progress and effectiveness of supported employment programs (RRTC, 1987).

The data for this study were abstracted from this national data bank. They were collected from the 70 service providers throughout Virginia which have adopted the Supported Work Model and received technical support from the RRTC. Individuals collecting the data included service providers, employment specialists, on-site job supervisors, or their representatives (Moon et al., 1986; RRTC, 1987). The data collection forms and procedures have evolved over time to meet the needs of individuals trying to understand how and why supported employment works, and to meet the needs of reporting agencies. The RRTC formalized data collection procedures in 1987 (RRTC, 1987).

All agencies and persons submitting data to RRTC were given training on appropriate procedures for completing and submitting data collection forms. As needed, the Center provided on-going technical support (Kregel, 1989; Moon et al., 1986; RRTC, 1987). Upon receipt the data forms were reviewed for completeness. When necessary,

service providers were contacted to ensure data completeness (Hill, Wehman, et al., 1987; Kregel et al., 1988). Data used in this study were collected through December 31, 1989. A detailed description of the data collection forms and procedures is available in the *Data Management System Operations Manual* (RRTC, 1987). Copies of the data collection forms used by the RRTC are found in Appendix A.

Consumer background data were collected by the person or agency referring the consumer (referral agent). The data were taken from records kept by the referral agent or other service providers, or from direct observations of the consumer by the referral agent. Consumer background data were reported on the Consumer Information/Referral Form (CIRF) (RRTC, 1987).

The employment specialist assessed the consumer's skills by observing the consumer, interviewing close associates (family members, teachers, other service providers) of the consumer, and reviewing any records available on the consumer. The data were recorded on the Consumer Employment Screening Form (CESF) (Moon et al., 1986; RRTC, 1987). The employment specialist assessed the skills demands of the workplace using the Job Screening Form (JSF) by spending a day at the job site observing others perform the job and/or performing the job (Sale et al., 1989). Much of the information on the CESF and JSF was similar and was reported in parallel form to facilitate making consumer/job matches (Kregel, 1989).

The job setting, work requirements and conditions, and starting date for the consumer were reported by the employment specialist on the Placement Report (RRTC, 1987). When a consumer was separated from the job, the employment specialist reported the date and reason for the separation on the Separation Report (RRTC, 1987). The employment specialist reported time spent working with the consumer on the Consumer-Specific Intervention Time Recording Sheet (Intervention Report).

Definition and Coding of the Variables

Function level (FUNCTION) was the consumer's retardation level as reported by the referral agent (question (Q) 18c on the CIRF). This classification was to be determined, as appropriate, independent of the consumer's numerical score on an IQ test (RRTC, 1987), and was patterned after Grossman's definitions of mental retardation (1977) to incorporate some measure of the consumer's adaptive skills. Responses were coded from "1" (profound) to "5" (borderline).

Item 6c from the CIRF, type of school the consumer last attended, was used to measure the EDUCATION variable. The type of school was defined as either "A school for students both with and without handicaps" or "A special education center for students with handicaps" (Q 6c, CIRF). This measured the consumer's educational background in terms of possible integrated experience rather than the time spent in a classroom. Integrated settings and experiences are widely thought to enhance the social and vocational skills of individuals with handicaps better than experiences in segregated settings (McLoughlin et al., 1987; Trach & Rusch, 1989; Schalock et al., 1981; Wehman et al., 1988). Attending a school for both handicapped and non-handicapped persons, however, did not ensure that the consumer had integrated experiences. The EDUCATION variable was coded "1" for the school with handicapped and non-handicapped students and "0" for the special education centers.

The consumer's experience in competitive work (EMPLOYMENT) was measured as the cumulative time (in months) spent in competitive employment prior to receiving supported employment services for the first time (Q 13, CIRF).

FAMILY SUPPORT was the employment specialist's response to the stem "Family support" (Q 17, CESF). Response choices included: "Very supportive of

work", "Supportive of work with reservations", "Indifferent about work", and "Negative about work". Responses were coded "4" to "1", respectively, with "4" being "Very supportive" and"1" being "Negative about work".

The types of government benefits received by the consumer during the month prior to referral were reported by the referral agent on the CIRF (Q 15, parts 1-7). The referral agent indicated whether ("Yes") or not ("No") the consumer had received any of the following services: "1 = SSI (Supplemental Security Income), 2 = SSDI (Social Security Disability Income), 3 = Medicaid, 4 = Medicare, 5 = Food Stamps, 6 = Public Assistance, 7 = Other", during the previous month. The responses were recorded "0" for "No" and "1" for "Yes". Missing values were coded "0". The BENEFITS variable was a composite formed by summing the responses across all government support services. The range for BENEFITS was "0" for receiving no benefits to "7" for receiving all governmental support services. All benefit programs were subject to income limits, and were either reduced and/or eliminated as income limits were exceeded (Noble & Conley, 1989).

The availability of transportation (TRANSPORTATION) prior to initial placement was indicated by the employment specialist on question 2 of the CESF. Responses were coded "0" for "No" and "1" for "Yes".

The match between a consumer's skill and the skills demands of a job (JOB MATCH) were determined using the Compatibility Index (Kregel, 1989). The Compatibility Index, and therefore the JOB MATCH variable, is a measure of the consumer's relative qualification for a job. Skill levels were assessed on the CESF (Q1, Q3-Q24) for the consumer and on the JSF (Q1, Q3-Q24) for the job (Table 1). All skills were coded such that "1" represented the lowest skill level. Missing data were coded "1" giving consumers with missing values at least minimal skill level for all skills assessed, rather than using the consumer's average skill level across all skills assessed. Each skill was

Table 1. The skills used to measure "Job Match" and their source

Skill	Instrument	
	CESF Question	JSF Question
Availability/Schedule	1	1
Strength	3	3
Endurance	4	4
Orienting	5	5
Physical Mobility	6	6
Work Rate	7	7
Appearance	8	8
Communication	9	9
Social Interactions	10	10
Behavior Patterns	11	11
Attention to Task	12	12
Sequencing Job Duties	13	13
Motivation	14	14
Adaptability	15	15
Reinforcement	16	16
Support	17	17
Financial Requirements	18	18
Discrimination Skills	19	19
Time Skills	20	20
Functional Reading	21	21
Functional Math	22	22
Street Crossing Skills	23	23
Visibility/Criticism	24	24

rated for its importance in being able to successfully perform the job. Importance levels ranged from "Not Important (NI)" (coded "1") to "Critically Important (CI)" (coded "4"). Missing values were coded "0". This, in effect, removed any skill lacking an importance value from the calculation of the Compatibility Index. A rating of critically important meant that the consumer should already have the skill, or could attain the skill shortly after placement (RRTC, 1989). Consumers lacking critical skills were not kept from a job if the employment specialist felt the consumers could attain the skill through training (J. Kregel, personal communication). Employment specialists were cautioned against making the level of importance the same as the skill level. For example, a high skill level requirement should not mean that a skill was critical for the position (RRTC, 1987).

Consumer skills were assigned the importance level of their corresponding job skill requirement. Each skill was multiplied by its appropriate importance level. Weighted skills were summed separately within consumers and job positions. The JOB MATCH was the difference between the total consumer skill score and the total job skill score (Kregel, 1989). Consumers with positive JOB MATCH scores were considered overqualified for the position. A JOB MATCH score of "0" indicated a perfect match between consumer skills and job demands.

EMPLOYER SUPPORT reflected the level of support an employer had for working with individuals with disabilities in general (RRTC, 1987), rather than the employer's support for a particular consumer. EMPLOYER SUPPORT was the response to the stem "Employer's Attitude" (Q 17, JSF). Responses were coded from "1" for "Negative Attitude Towards Workers with Disabilities" to "4" for "Very Supportive of Workers with Disabilities".

The potential level of social contact (Q 26, JSF) was used to measure the consumer social integration at the work place. SOCIAL LEVEL ranged from employment

in a segregated work setting with little opportunity to interact with persons without disabilities (coded "0") to employment in an integrated work setting with high task dependency and high levels of contact with nonhandicapped co-workers and customer (coded "4").

Job training was the time the employment specialist spent working directly with the consumer on vocational skills (including time spent in active observation) and the time spent working indirectly with the consumer teaching social and nonvocational and developing instructional plans and task analyses (see RRTC, 1987, for further definition of terms). Training time was recorded by the employment specialist on the Intervention Report using items 1 and 2 under "Intervention Time Directly Related to Job Skills Training", and items 2 and 3 under "Intervention Time Indirectly Related to Job Skills Training" on the Intervention Sheet. Intervention times were recorded in hours and minutes.

Intervention time has been expressed as both total time and proportional time (a percentage of the time worked by the consumer) in intervention time studies (Kregel et al., 1988; Johnson & Rusch, 1990). Kregel et al. (1988) believe using the total amount of intervention time for a consumer may be misleading and suggest that using proportional time may be more meaningful when studying intervention time. Training time (TRAINING) was measured both as proportional time and total time in this study. Proportional time was the ratio of job training time to total work time for the consumer during the first five weeks of employment. Job training time for each consumer was the sum of all training times recorded between the hire date (Placement Report) and the 56th calendar day after initial placement. There was no direct measure of the number of hours a consumer worked. The total hours a consumer worked was estimated by multiplying the number of hours the position was available to the consumer each week (unnumbered item on the JSF) by the number of weeks worked by the consumer during

the first eight weeks or, as appropriate, after eight weeks. These represented the maximum number of hours rather than the actual number of hours a consumer could work while employed. The former was used to determine the proportional time for TRAINING and ADVOCACY; while the latter was used for MONITORING, and FOLLOW-ALONG. Intervention times prior to initial placement were excluded from this analysis.

Advocacy was time the employment specialist spent meeting with employers, supervisors, co-workers, and customers at the consumer's job site (Direct Advocacy) or meeting bus drivers, landlords, other service providers, and family members not directly associated with the job site (Indirect Advocacy) (RRTC, 1987). Advocacy time was recorded on the Intervention Sheet under "Intervention Time Indirectly Related to Jobs Skills Training", items 4 and 5. ADVOCACY was measured both as the ratio of advocacy time to the total amount of time worked by the consumer during the first eight weeks of employment (proportional time) and as the total advocacy time spent by the employment specialist during the first eight weeks of employment. Advocacy time was the sum of all advocacy times recorded between the hire date (Placement Report) and the 56th calendar day after initial placement.

Hill, Hill, et al. (1987) suggest that the training time ends when the staff time required to support a consumer falls below 20% for eight consecutive weeks. Eight weeks (56 calendar days after placement), therefore, was defined as the minimal end of the training period and the beginning of the monitoring/follow-along component of the supported work program. MONITORING was defined as any activity on the part of the employment specialist to evaluate the work performance of the consumer. The employment specialist recorded time spent screening and/or evaluating the consumer on item 6 under the "Intervention Time Indirectly Related to Job Skills Training" portion of the Intervention Report. MONITORING was either the ratio of evaluation time to

time worked by the consumer after the eighth week of employment (proportional time advocacy) or the total evaluation time after eight weeks (total time advocacy). Evaluation time was the sum of all evaluation times recorded between the 56th calendar day after initial placement and either the separation date (Separation Report) or the 183rd calendar day after initial placement, which ever came first.

Follow-along was defined as any intervention performed by the employment specialist to ensure the continued employment of the consumer. FOLLOW-ALONG was measured as the ratio of total intervention time to the time worked by the consumer after the fifth week of employment and as the total intervention time for the consumer. The total intervention time was the sum of all time recorded on the consumer's Intervention Sheet (items 1 & 2 under "Intervention Time Directly Related to Job Skills Training" and items 1-6 under "Intervention Time Indirectly Related to Job Skills Training") between the 35th calendar day after initial placement and either the separation date (Separation Report) or the 183rd calendar day after initial placement, which ever came first.

Two employment outcomes examined in this study, employment at eight weeks (short term employment) and employment at six months (long term employment). Eight week employment occurred if the consumer was still working 56 calendar days after initial placement. Six month employment occurred if the consumer was still working 183 days after initial placement. A consumer was considered unemployed if a Separation Report was on record during either of the employment periods. The two employment outcomes were dichotomous variables, coded "1" for employed and "0" for unemployed.

Data Analysis

The sample for this study was extracted from the supported employment data base maintained by RRTC (Wehman, 1988). Consumers were selected if they met the following criteria:

1. Primary disability was mental retardation as reported on the CIRF (Q 17).
2. Received supported employment services from a Virginia provider. The service provider identification number was recorded on all data collection forms. The service provider identification numbers for Virginia providers were between 50999 and 52000 (H. Metzler, personal communication).
3. Initial job placement was between September 1, 1987 and July 1, 1989. The initial placement date was defined as the earliest hire date on the data base for a consumer. The hire date was reported on the Placement Form (RRTC, 1987).
4. Placed in an individual job setting. The job type or setting was recorded on the JSF. Individual job placements included:
    - Supported job -- consumer was placed in a regular community job while receiving on-going support from an agency in order to maintain employment (RRTC, 1987);
    - Supported competitive employment -- consumer was placed in a real work setting, worked a minimum of 20 hours per week, and earned at least minimum wage, where support from an employment specialist was gradually reduced over time (RRTC, 1987); and
    - Time limited services.
5. Completeness of data. Data had to be available from CIRF, CESF, JSF, Placement Report, Intervention Sheet, and, as appropriate, Separation Report.

There were 482 first time consumers with mental retardation receiving services from Virginia providers in the RRTC data bank. After selecting for date and type of placement, as well as completeness and accuracy of data, a sample of 295 consumers were available for use in this study. This sample was used to estimate the short term supported employment models. Consumers from this group who were employed at eight weeks (n = 254) were used to estimate the long term supported employment models. The sample was compared with the population of first time consumers using several demographic characteristics to ensure the representativeness of the sample.

Correlations among the consumer background characteristics, supported work program components, and employment outcome were estimated using the listwise deletion option of PROC CORR (SAS Institute Inc., 1985) for both samples. The resulting sample sizes (n = 176 for the short term model and n = 151 for the long term model) were too small for use in a path analysis (Hayduk, 1987; Pedhazur, 1982). The correlations, therefore, were estimated using pairwise deletions (SAS Institute Inc., 1985). The number of observations used to estimate the correlations ranged from 214 to 295 for the short term model and 187 to 254 for the long term model. Means and standard deviations were determined for all variables within a model.

Estimating the Path Models

All path coefficients were estimated using the LISREL submodel 2, a path analysis model for directly observed variables (Joreskog & Sorbom, 1989). LISREL was chosen for the analyses because it permits the estimation of direct, indirect, and total effects for variables in a model as well as their standard errors for use in statistical hypothesis testing. Estimates of path coefficients and effects were considered statistically

significant if they were at least twice the size of their standard errors (Hayduk, 1987) and were greater than 0.05 (if standardized) (Pedhazur, 1982).

Two models each were estimated for short term and long term employment. One model for each outcome included all consumer background characteristics and program components, with TRAINING, ADVOCACY, MONITORING, and FOLLOW-ALONG (as appropriate) measured as a proportion of the total time worked by the consumer (proportional time model). The second model was estimated using the same variables with TRAINING, ADVOCACY, MONITORING, and FOLLOW-ALONG (as appropriate) measured as the total time devoted to each activity (total time model). The path coefficients were estimated using the maximum likelihood method under LISREL7 by regressing each endogenous variable on all appropriate predetermined variables in the path model. Variables within a block were assumed to have no causal effect on any other variables within the block. Standardized coefficients were obtained for each model by analyzing a correlation matrix. Metric coefficients were determined by analyzing a pairwise covariance matrix.

Chapter 4

Results

The purpose of this study was to determine the effects of the Supported Work Model program components (Wehman & Kregel, 1985) on the short term (eight week) and long term (six month) employment of consumers with mental retardation. The population chosen for this study was consumers receiving services from agencies in Virginia who had contracted with the Rehabilitation Research and Training Center (RRTC) of Virginia Commonwealth University for technical support. The population was further delimited to consumers placed in individual job settings between September 1, 1987 and July 1, 1989. The data were abstracted from the RRTC national supported employment data bank (Wehman, 1988). The results are presented below.

Consumer Demographics

There were 602 first time consumers with mental retardation receiving services from Virginia agencies and who had information from the Consumer Information Referral Form (CIRF), the Consumer Employment Screening Form (CESF), and the Job Screening Form (JSF) as well as a record of their supported employment work history.

After selecting for appropriate placement date and placement type, a sample of 295 consumers was available for use in this study.

Consumers placed individualized job settings after September 1, 1987 (the sample) were compared with the consumers either placed in group job settings or prior to September 1, 1987 (the non-sample) on a number of demographic characteristics (Table 2). The average consumer in the sample was similar in age (28.2 vs. 28.4y, $p > 0.05$) to other first time consumers but had a higher IQ test score (57.3 vs. 53.5, $p < 0.05$) and had more months of competitive work experience prior to placement (9.0 vs. 4.2, $p < 0.05$) than consumers not in the sample. There was, however, no difference in the function level of consumers in the sample and consumers not in the sample (Table 2). This suggests that even though there is a statistical difference in the measured intelligence of the consumers, there was no substantive difference in their ability to function. Fewer than 10% of the consumers in the sample and slightly more than 10% of the consumers not in the sample were either severely or profoundly handicapped.

There were more women than men in the sample (53% vs. 47%). This pattern is different from the non-sample ($p < 0.05$), where men outnumbered women (58% vs. 42%), and is contrary to the pattern observed in most studies on the effects of supported employment programs (Kiernan et al., 1989; Schalock et al., 1989; Trach & Rusch, 1989; Wacker et al., 1989). The sample contained a lower proportion of Caucasian consumers than the non-sample (56% vs. 65%, $p < 0.05$) and more Afro-Americans (43% vs. 33%).

These differences suggest that consumers receiving individualized placements under the Supported Work Model are not representative of all first time consumers with mental handicaps receiving supported employment services, and that caution is advised when generalizing the results of this study.

Table 2. Background characteristics of first time consumers

Characteristic	Non-Sample (N = 482)	Sample (N = 295)
Age (years)	28.4 (8.1)	28.2 (8.6)
Competitive Work Experience (months)	4.2* (16.8)	9.0* (26.7)
IQ Score	53.5* (13.4)	57.3* (13.2)
Function Level		
Profound (%)	5 (1.6)	1 (0.3)
Severe (%)	31 (10.1)	21 (7.1)
Moderate (%)	100 (32.6)	80 (27.2)
Mild (%)	143 (46.7)	152 (51.8)
Borderline (%)	27 (8.8)	40 (13.6)
Gender*		
Male (%)	178 (58.0)	139 (47.1)
Female (%)	129 (42.0)	156 (52.9)
Ethnicity*		
Afro-American (%)	92 (33.2)	125 (42.7)
Caucasian (%)	180 (65.0)	165 (56.3)
Other (%)	5 (1.9)	2 (1.0)

* Significant at $p < 0.05$

Note:
Standard deviations are in parentheses for Age, Competitive Work Experience, and IQ Score.

Most of the consumers were placed in low paying, service oriented jobs. Almost 53% of the consumers in this study were employed by the food service industry, approximately 20% were employed as housekeepers, and the remaining consumers were employed as laborers, stock clerks, grounds keepers, bench workers, and the like.

Eight weeks after initial job placement, approximately 86% (254) of the consumers in the sample were still employed. The six month employment rate for the same consumers dropped to 64% (190).

Correlations Among Variables

Correlations among consumer background characteristics, measures of the supported work model program components, and employment were estimated for both short term and long term employment models using listwise and pairwise options under SAS (SAS Institute Inc., 1985). The resulting sample sizes using listwise deletion (short term, n = 171; and long term, n = 151) were too small (recommended n = 200) for use in a path analytical study using LISREL (Hayduk, 1987). Therefore, pairwise correlations were used in this study. The correlation matrices, with the means and standard deviations for each variable, are presented in Table 3 for the short term models and Table 4 for the long term models. The number of cases used to estimate the correlations ranged from 214 to 295 for the short term models and from 187 to 254 for the long term models.

There were few significant correlations between consumer background characteristics, job site characteristics, and program components, and the two outcome measures, short term employment (WORK2) and long term employment (WORK6) (Tables 3 & 4). The significant correlations were moderate in size. This may be due to the lim-

Table 3. Pairwise correlations, means, and standard deviations for the short term employment models

Predetermined Variables	Dependent Variables 1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. FUNCTION	1.000													
2. EDUCATION	0.193*	1.000												
3. EMPLOYMENT	0.173*	-0.068	1.000											
4. FAMILY SUPPORT	-0.036	-0.037	0.045	1.000										
5. BENEFITS	-0.284*	-0.192*	-0.159*	-0.152*	1.000									
6. TRANSPORTATION	-0.061	0.030	0.064	0.205*	-0.197*	1.000								
7. JOB MATCH	0.256*	0.110	0.106	0.040	-0.107	0.128*	1.000							
8. SOCIAL LEVEL	0.072	0.037	-0.011	0.106	-0.082	0.048	-0.004	1.000						
9. EMPLOYER SUPPORT	-0.057	-0.022	-0.062	0.074	0.032	-0.069	-0.065	-0.071	1.000					
10. TRAINING	-0.268*	-0.089	-0.131*	-0.023	0.284*	-0.045	-0.191*	-0.025	-0.054	1.000				
11. TRAINING (%)	-0.278*	-0.109	-0.183*	-0.002	0.202*	-0.051*	-0.201*	-0.036	0.037	0.487*	1.000			
12. ADVOCACY (%)	-0.111	-0.053	-0.009	-0.035	0.140*	-0.113	-0.050	-0.010	0.012	0.246*	0.137*	1.000		
13. ADVOCACY	-0.235*	-0.025	-0.059	-0.011	0.094	-0.079	-0.104	-0.048	-0.014	0.002	0.272*	0.537*	1.000	
14. WORK2	0.051	-0.060	0.073	0.063	0.108	0.232*	0.023	0.019	-0.060	0.216*	-0.198*	-0.026	-0.306*	1.000
MEAN	3.711	0.688	9.022	3.596	1.319	0.684	23.095	3.330	3.787	88.684	0.488	7.280	0.044	0.861
SD	0.802	0.464	26.691	0.682	1.192	0.466	22.882	0.782	0.450	56.264	0.428	6.514	0.067	0.347
N	294	263	270	270	295	237	295	294	291	295	295	295	295	295

* Significant at $p < 0.05$

Table 4. Pairwise correlations, means, and standard deviations for the long term employment models.

Predetermined Variables	Dependent Variables 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. FUNCTION	1.000																	
2. EDUCATION	0.203*	1.000																
3. EMPLOYMENT	0.173*	-0.070	1.000															
4. FAMILY SUPPORT	-0.029	-0.063	0.044	1.000														
5. BENEFITS	-0.291*	-0.162*	-0.186*	-0.131*	1.000													
6. TRANSPORTATION	-0.059	0.050	0.048	0.166*	-0.235*	1.000												
7. JOB MATCH	0.264*	0.108	0.092	0.033	-0.096	0.093	1.000											
8. SOCIAL LEVEL	0.060	0.048	-0.010	0.100	-0.065	0.044	0.005	1.000										
9. EMPLOYER SUPPORT	-0.080	-0.003	-0.070	0.102	0.030	-0.009	-0.069	-0.090	1.000									
10. TRAINING	-0.293*	-0.053	-0.160*	-0.043	0.243*	-0.102	-0.205*	-0.003	-0.090	1.000								
11. TRAINING (%)	-0.384*	-0.093	-0.187*	-0.034	0.321*	-0.188*	-0.275*	-0.063	0.017	0.854*	1.000							
12. ADVOCACY	-0.073	-0.068	0.004	-0.029	0.115	-0.103	-0.041	0.059	-0.029	0.201*	0.230*	1.000						
13. ADVOCACY (%)	-0.171*	-0.060	-0.032	-0.018	0.151*	-0.166*	-0.093	0.024	0.039	0.160*	0.351*	0.913*	1.000					
14. MONITORING	0.024	-0.053	0.020	0.038	-0.014	-0.001	0.023	0.138*	-0.047	0.019	0.052	0.112	0.115	1.000				
15. MONITORING (%)	0.026	-0.035	-0.003	0.021	-0.002	-0.059	0.018	0.118	-0.076	0.024	0.057	0.086	0.095	0.908*	1.000			
16. FOLLOW-ALONG	-0.304*	-0.139*	-0.057	-0.038	0.226*	-0.059	-0.174*	-0.169*	0.030	0.395*	0.520*	0.241*	0.318*	0.077	0.057	1.000		
17. FOLLOW-ALONG (%)	-0.328*	-0.154*	-0.079	-0.007	0.204*	-0.079	-0.211*	-0.182*	0.063	0.293*	0.536*	0.232*	0.396*	0.056	0.060	0.913*	1.000	
18. WORK6	-0.016	-0.124	0.083	0.039	-0.041	0.018	-0.026	-0.041	0.140*	-0.104	-0.045	-0.001	0.028	0.051	-0.045	0.167*	0.064	1.000
MEAN	3.727	0.677	9.823	3.613	1.370	0.730	23.307	3.336	3.776	93.549	0.454	7.211	0.036	0.374	0.0004	44.561	0.080	0.748
SD	0.807	0.469	28.560	0.685	1.185	0.445	23.065	0.773	0.455	55.806	0.288	6.299	0.035	1.566	0.002	49.698	0.109	0.435
N	253	226	231	235	254	200	254	253	250	254	254	254	254	244	244	244	244	254

* Significant at $p < 0.05$

ited variability in the outcome measures and some of the predetermined variables. Also, some of the measures for the predetermined variables, such as total time the consumer worked, were simple approximations of complex constructs. The relationships suggested by the correlations, and by the path analyses using these correlations, therefore, may be attenuated estimates of the relationships among the predetermined and outcome variables.

Path Models

Most components of the Supported Work Model involved interventions provided by an employment specialist. These interventions were measured as the amount of time devoted to each intervention activity (RRTC, 1987). When studying intervention effects on employment, intervention activities are either expressed as the total time devoted to the activity (total time) or as a percentage of the total time worked by the consumer (proportional time) (Kregel et al., 1988; Johnson & Rusch, 1990). The latter method is used to adjust for differences in the number of hours worked by the consumer. Separate models were estimated for short term and long term employment using both measures of intervention times. All results presented below are based on the standardized path coefficients. Metric coefficients for all model are presented in Appendix B.

The reduced form equation (the outcome variable regressed on all other variables in the model) gives a measure of the variability in the outcome variable explained by the direct effects of the variables in the model. The amount of variability explained by the reduced form equations for employment at eight weeks was 19.1% for the proportional time equation and 15.9% for the total time equation. The reduced form equations for

six month employment explained considerably less variability (5.5% and 9.6%, respectively, for the proportional time and total time equations).

Short Term Employment Models

The short term models were estimated to determine the program components which help to stabilize the consumer on the job. Two models were estimated, one using employment specialist interventions measured as a proportion of the total time the consumer worked during the first eight weeks; and the other expressing interventions as the total time devoted to each intervention activity.

It was hypothesized that:

- Training and advocacy would have direct effects on employment at eight weeks; and
- Background characteristics and job site characteristics would have indirect effects on employment, and direct, as well as indirect, effects on individual program components.

Proportional time short term model. When interventions were expressed as a proportion of the time worked by the consumer, training and advocacy had negative effects on employment (See Tables 5 & 6; Table 6 and similar tables that follow display only significant direct, indirect, and total effects). Consumers who spent a greater proportion of their time in on-the-job training were less likely to be employed at eight weeks (Total Effects, TE = -0.156), as were consumers who required more advocacy services from employment specialists (TE = -0.261). Consumers having transportation available prior to placement were more likely to be employed over the short term (TE = 0.270). In-

Table 5. Structural coefficients for proportional time short term employment model, standard form

Predetermined Variables	Dependent Variables 7	8	9	10	11	12
1. FUNCTION	0.246* (0.065)	0.076 (0.069)	-0.036 (0.069)	-0.186* (0.065)	-0.231* (0.068)	0.040 (0.065)
2. EDUCATION	0.066 (0.062)	0.018 (0.065)	-0.006 (0.065)	-0.046 (0.061)	0.029 (0.063)	-0.046 (0.059)
3. EMPLOYMENT	0.060 (0.062)	-0.032 (0.064)	-0.050 (0.064)	-0.124* (0.061)	-0.009 (0.063)	0.040 (0.059)
4. FAMILY SUPPORT	0.023 (0.062)	0.099 (0.064)	0.094 (0.064)	0.022 (0.061)	0.010 (0.063)	0.048 (0.059)
5. BENEFITS	0.015 (0.066)	-0.045 (0.068)	0.007 (0.068)	0.105 (0.065)	0.011 (0.067)	0.223* (0.062)
6. TRANSPORTATION	0.135* (0.063)	0.029 (0.066)	-0.080 (0.066)	-0.021 (0.062)	-0.089 (0.064)	0.243* (0.060)
7. JOB MATCH		-0.035 (0.065)	-0.042 (0.065)	-0.122 (0.062)	-0.038 (0.064)	-0.057 (0.060)
8. SOCIAL LEVEL				-0.015 (0.060)	-0.032 (0.061)	-0.002 (0.057)
9. EMPLOYER SUPPORT				0.002 (0.059)	-0.039 (0.061)	-0.052 (0.057)
10. TRAINING (%)						-0.156* (0.060)
11. ADVOCACY (%)						-0.261* (0.058)
12. WORK2						
Coefficient of Determination	0.093	0.022	0.021	0.127	0.068	0.191

* Coefficient at least twice its standard error.

Note:
Number in parentheses is the standard error.

Table 6. Direct, indirect, and total effects of variables in the proportional time short term employment model

Variable	Direct	Indirect	Total
FUNCTION			
on JOB MATCH	0.246*	0.000	0.246*
on TRAINING (%)	-0.186*	-0.031	-0.217*
on ADVOCACY (%)	-0.230*	-0.010	-0.240*
EMPLOYMENT			
on TRAINING (%)	-0.124*	-0.007	-0.131*
BENEFITS			
on WORK2	0.223*	-0.020	0.203*
TRANSPORTATION			
on JOB MATCH	0.135*	0.000	0.135*
on WORK2	0.243*	0.027	0.270*
TRAINING (%)			
on WORK2	-0.156*	0.000	-0.156*
ADVOCACY (%)			
on WORK2	-0.261*	0.000	-0.261*

* Effect is at least twice as large as its standard error.

creased participation in government benefit programs, thought by many to be an employment disincentive for individuals with handicaps, had a positive effect on employment (TE = 0.203). No other consumer background characteristic or job site characteristic had an effect on eight week employment.

Consumer function level influenced several of the program components but had no effect on employment (Tables 5 & 6). Higher functioning consumers tended to have better job matches (TE = 0.246), spent less time training on the job (TE = -0.217), and received less advocacy support from their employment specialists (TE = -0.240) than the lower functioning consumers. Prior competitive work experience decreased the amount of training a consumer required (TE = -0.131). The level of family support and type of educational experience had no effect on the implementation of the Supported Work Model program components. The characteristics of the job site (employer support and level of social integration) had no influence on the amount of training or advocacy support a consumer required.

Total time short term employment model. When programs effects were estimated using total instead of proportional time, consumers who received the most training, regardless of the number of hours worked, were more likely to be employed at eight weeks (Tables 7 & 8). Advocacy, one of the most important contributors to employment when estimating effects using proportional time, had no effect on employment (Table 7).

Having transportation prior to job placement increased the likelihood of short term employment (TE = 0.135). Participation in government benefit programs also increased employment at eight weeks (TE = 0.225). Almost one-fourth of the effects of government benefit programs on employment was due to indirect effects (IE = 0.047), mostly through training (IE = 0.054).

Table 7. Structural coefficients for total time short term employment model, standard form

Predetermined Variables	Dependent Variables 7	8	9	10	11	12
1. FUNCTION	0.246* (0.065)	0.076 (0.069)	-0.036 (0.069)	-0.166* (0.065)	-0.092 (0.069)	0.165* (0.065)
2. EDUCATION	0.066 (0.062)	0.018 (0.065)	-0.006 (0.065)	-0.008 (0.061)	-0.012 (0.065)	-0.045 (0.060)
3. EMPLOYMENT	0.060 (0.062)	-0.032 (0.064)	-0.050 (0.064)	-0.061 (0.060)	0.029 (0.064)	0.079 (0.060)
4. FAMILY SUPPORT	0.023 (0.062)	0.099 (0.064)	0.094 (0.064)	0.018 (0.061)	-0.006 (0.064)	0.037 (0.060)
5. BENEFITS	0.015 (0.066)	-0.045 (0.068)	0.007 (0.068)	0.217* (0.064)	0.096 (0.068)	0.156* (0.065)
6. TRANSPORTATION	0.135* (0.063)	0.029 (0.066)	-0.080 (0.066)	-0.001 (0.062)	-0.100 (0.065)	0.264* (0.062)
7. JOB MATCH		-0.035 (0.065)	-0.042 (0.065)	-0.124* (0.061)	-0.005 (0.065)	0.002 (0.061)
8. SOCIAL LEVEL				-0.004 (0.059)	0.010 (0.063)	0.010 (0.059)
9. EMPLOYER SUPPORT				-0.084 (0.059)	-0.001 (0.063)	-0.022 (0.059)
10. TRAINING						0.249* (0.063)
11. ADVOCACY						-0.061 (0.059)
12. WORK2						
Coefficient of Determination	0.093	0.022	0.021	0.143	0.036	0.159

* Coefficient at least twice its standard error.

Note:
Number in parentheses is the standard error.

Table 8. Direct, indirect, and total effects of variables in the total time short term employment model, standard form

Variable	Direct	Indirect	Total
FUNCTION			
on JOB MATCH	0.246*	0.000	0.246*
on TRAINING	-0.166*	-0.027	-0.193*
on ADVOCACY	0.165*	-0.040	0.125
BENEFITS			
on TRAINING	0.217*	-0.002	0.215*
on WORK2	0.155*	0.047*	0.203*
TRANSPORTATION			
on JOB MATCH	0.135*	0.000	0.135*
on WORK2	0.264*	0.006	0.270*
JOB MATCH			
on TRAINING	-0.124*	0.004	-0.120
TRAINING			
on WORK2	0.249*	0.000	0.249*

* Effect is at least twice as large as its standard error.

Consumer function level influenced a number of program components (Table 8). Higher functioning consumers were better matched for their jobs (TE = 0.246), and required less training (TE = -0.193) and advocacy (TE = -0.125) support than lower functioning consumers. These effects were similar to those in the proportional time model (Table 7). Consumers who were better matched for their jobs required less job training (TE = -0.120). Prior competitive work experience had negligible effect on the implementation of the support work program and short term employment (Table 7). The amount of family support and type of educational experiences a consumer had did not influence the implementation of the Supported Work Model program components (Tables 7 & 8). Characteristics of the job site (employer support and level of social integration) had no affect on the amount of training and advocacy support a consumer required (Tables 7 & 8).

Long Term Employment Models

Consumers employed at eight weeks were used to estimate the effects of Supported Work Model program components on six month employment. Consumers unemployed at eight weeks were excluded because they would not have access to monitoring and follow-along services. As with the short term employment model, models were estimated using both proportional time and total time for interventions. Between eight weeks and six months, 64 consumers were separated from their jobs. Specific hypotheses tested were:

- Monitoring and follow-along will be the only program components to directly effect employment at six months;

- Training and advocacy will only have indirect effects on long term employment, but direct effects on follow-along; and
- Consumer background characteristics and job site characteristics will only have indirect effects on long term employment, but direct and/or indirect effects on program components.

Proportional time long term employment model. When employment specialist intervention times were expressed as a proportion of the total time the consumer worked, the only background characteristic or program component having an effect on employment at six months was the degree of employer support for hiring individuals with disabilities (Tables 9 & 10). Employers who were supportive of hiring workers with disabilities increased the chance of long term employment for consumers in this study (TE = 0.132). Both monitoring and follow-along had negligible effects on long term employment (TE = -0.036 and 0.086, respectively).

Training and advocacy had no effects on long term employment (Tables 9 & 10). Each, however, had positive effects on the amount of follow-along services a consumer required (TE = 0.394 and 0.243, respectively).

The consumer's function level influenced more program components than any other background variable (Table 9 & 10). Higher functioning consumers had better job matches and required less training, advocacy, and follow-along support (Table 10). The effect of function level on training was enhanced by an indirect effect through the consumer's job match (IE = -0.043). Much of the total effect of function level on follow-along (66%) was due to indirect effects through training (IE = -0.112) and advocacy (IE = -0.087); its direct effect was negligible (DE = -0.099).

Consumer participation in government benefit programs had no effect on long term employment (Table 9 & 10), whereas it had had an effect on short term employ-

Table 9. Structural coefficients for proportional time long term employment model, standard form

Predetermined Variables	Dependent Variables 7	8	9	10	11	12	13	14
1. FUNCTION	0.258*	0.058	-0.055	-0.286*	-0.154*	0.043	-0.098	-0.001
	(0.069)	(0.074)	(0.074)	(0.065)	(0.072)	(0.077)	(0.062)	(0.077)
2. EDUCATION	0.060	0.037	0.020	0.016	-0.007	-0.044	-0.069	-0.118
	(0.066)	(0.069)	(0.069)	(0.060)	(0.067)	(0.068)	(0.055)	(0.068)
3. EMPLOYMENT	0.051	-0.027	-0.056	-0.085	0.020	-0.010	0.018	0.068
	(0.066)	(0.069)	(0.068)	(0.060)	(0.067)	(0.068)	(0.055)	(0.068)
4. FAMILY SUPPORT	0.028	0.098	0.111	0.022	0.006	0.022	0.011	0.010
	(0.065)	(0.068)	(0.068)	(0.060)	(0.067)	(0.068)	(0.054)	(0.067)
5. BENEFITS	0.027	-0.030	0.012	0.176*	0.071	-0.025	0.002	-0.045
	(0.071)	(0.073)	(0.073)	(0.064)	(0.071)	(0.074)	(0.059)	(0.073)
6. TRANSPORTATION	0.104	0.025	-0.021	-0.147*	-0.159*	-0.047	0.044	0.003
	(0.067)	(0.070)	(0.070)	(0.061)	(0.068)	(0.071)	(0.057)	(0.070)
7. JOB MATCH		-0.020	-0.052	-0.166*	-0.030	0.032	-0.052	-0.018
		(0.069)	(0.069)	(0.060)	(0.068)	(0.070)	(0.056)	(0.069)
8. SOCIAL LEVEL				-0.034	0.047	0.111	-0.158*	-0.012
				(0.058)	(0.065)	(0.066)	(0.053)	(0.067)
9. EMPLOYER SUPPORT				-0.035	0.026	-0.067	0.025	0.134*
				(0.058)	(0.065)	(0.066)	(0.053)	(0.066)
10. TRAINING (%)						0.057	0.392*	-0.089
						(0.076)	(0.061)	(0.082)
11. ADVOCACY (%)						0.079	0.240*	0.024
						(0.068)	(0.054)	(0.070)
12. MONITORING (%)							0.038	-0.039
							(0.053)	(0.066)
13. FOLLOW-ALONG (%)								0.086
								(0.083)
14. WORK6								
Coefficient of Determination	0.086	0.018	0.024	0.255	0.068	0.032	0.357	0.055

* Coefficient is at least twice its standard error.

Note:
Number in parentheses is the standard error.

Table 10. Direct, indirect, and total effects of variables in the proportional time long term employment model, standard form

Variable	Direct	Indirect	Total
FUNCTION			
on JOB MATCH	0.258*	0.000	0.258*
on TRAINING (%)	-0.286*	-0.042*	-0.328*
on ADVOCACY (%)	-0.154*	-0.007	-0.161*
on FOLLOW-ALONG (%)	-0.099	-0.189*	-0.288*
BENEFITS			
on TRAINING (%)	0.177*	-0.004	0.173*
on FOLLOW-ALONG (%)	0.002	0.087*	0.089
TRANSPORTATION			
on TRAINING (%)	-0.148*	-0.017	-0.165*
on ADVOCACY (%)	-0.159*	-0.003	-0.162*
on FOLLOW-ALONG (%)	0.044	-0.116*	-0.071
JOB MATCH			
on TRAINING (%)	-0.165*	0.002	-0.163*
on FOLLOW-ALONG (%)	-0.052	-0.069*	-0.121
SOCIAL LEVEL			
on FOLLOW-ALONG (%)	-0.158*	0.002	-0.156*
EMPLOYER SUPPORT			
on WORK6	0.134*	0.008	0.142*
TRAINING (%)			
on FOLLOW-ALONG (%)	0.392*	0.002	0.394*
ADVOCACY (%)			
on FOLLOW-ALONG (%)	0.240*	0.003	0.243*

* Effect is at least twice as large as its standard error.

ment (Table 6). It did, however, increase the consumer's training needs (TE = 0.173). Participation in benefit programs indirectly increased the amount of follow-along support received by the consumer (IE = 0.087), primarily through training (IE = 0.069) and advocacy (IE = 0.017). It had no appreciable overall effect on follow-along (TE = 0.089).

Transportation availability prior to job placement had no effect on long term employment (Tables 9 & 10). It, however, reduced the total amount of time the employment specialist spent advocating for the consumer (TE = -0.183), and decreased the amount of time the consumer spent in training (TE = -0.165). Transportation availability had a negative indirect effect on follow-along (IE = -0.116), operating mostly through training (IE = -0.059) and advocacy (IE = -0.038). Its overall effect was reduced by its small positive direct effect on follow-along (DE = 0.044).

The level of family support and the educational experiences of a consumer had no effect on the implementation of the Supported Work Model (Tables 9 & 10).

Carefully matching consumers to their jobs reduced training and follow-along interventions (Table 9). Job match indirectly reduced the amount of follow-along support required by a consumer (IE = -0.069), primarily through its effect on training (DE = -0.166). The opportunity to interact with nonhandicapped co-workers and customers reduced the amount of follow-along supported needed by a consumer (TE = -0.156).

Total time long term employment model. When the total time for interventions was used to estimate the effects of the Supported Work Model program components on six month employment, receiving follow-along support increased the likelihood of employment at six months (Tables 11 & 12). Monitoring activities had no effect on consumer employment (Table 11). Overall, training had no effect on employment. Consumers who required large amount of training were less likely to be employed at six months (DE =

Table 11. Structural coefficients for total time long term employment model, standard form

Predetermined Variables	Dependent Variables 7	8	9	10	11	12	13	14
1. FUNCTION	0.258*	0.058	-0.055	-0.222*	-0.055	0.027	-0.154*	0.014
	(0.069)	(0.074)	(0.074)	(0.069)	(0.074)	(0.075)	(0.066)	(0.074)
2. EDUCATION	0.060	0.037	0.020	0.026	-0.041	-0.060	-0.049	-0.105
	(0.066)	(0.069)	(0.069)	(0.064)	(0.069)	(0.068)	(0.060)	(0.067)
3. EMPLOYMENT	0.051	-0.027	-0.056	-0.086	0.030	0.005	0.031	0.060
	(0.066)	(0.069)	(0.068)	(0.064)	(0.068)	(0.068)	(0.060)	(0.066)
4. FAMILY SUPPORT	0.028	0.098	0.111	0.003	-0.014	0.025	-0.009	0.010
	(0.065)	(0.068)	(0.068)	(0.063)	(0.068)	(0.068)	(0.059)	(0.066)
5. BENEFITS	0.027	-0.030	0.012	0.143*	0.080	-0.014	0.075	-0.056
	(0.071)	(0.073)	(0.073)	(0.068)	(0.073)	(0.074)	(0.064)	(0.071)
6. TRANSPORTATION	0.104	0.025	-0.021	-0.069	-0.087	-0.001	0.012	0.003
	(0.067)	(0.070)	(0.070)	(0.065)	(0.069)	(0.070)	(0.061)	(0.067)
7. JOB MATCH		-0.020	-0.052	-0.130*	-0.011	0.023	-0.057	-0.015
		(0.069)	(0.069)	(0.064)	(0.069)	(0.069)	(0.060)	(0.067)
8. SOCIAL LEVEL				0.010	0.073	0.127*	-0.168*	0.006
				(0.062)	(0.066)	(0.066)	(0.058)	(0.066)
9. EMPLOYER SUPPORT				-0.127*	-0.027	-0.030	0.034	0.124
				(0.062)	(0.067)	(0.067)	(0.058)	(0.065)
10. TRAINING						0.011	0.292*	-0.163*
						(0.071)	(0.062)	(0.073)
11. ADVOCACY						0.103	0.159*	-0.026
						(0.067)	(0.058)	(0.066)
12. MONITORING							0.082	0.036
							(0.058)	(0.065)
13. FOLLOW-ALONG								0.236*
								(0.074)
14. WORK6								
Coefficient of Determination	0.087	0.018	0.024	0.157	0.031	0.035	0.257	0.096

* Coefficient is at least twice its standard error.

Note:
Number in parentheses is the standard error.

Table 12. Direct, indirect, and total effects of variables in the total time long term employment model, standard form

Variable	Direct	Indirect	Total
FUNCTION			
on JOB MATCH	0.258*	0.000	0.258*
on TRAINING	-0.222*	-0.024	-0.246*
on FOLLOW-ALONG	-0.154*	-0.104*	-0.258*
BENEFITS			
on TRAINING	0.143*	-0.005	0.138*
SOCIAL LEVEL			
on MONITORING	0.127*	0.008	0.135*
on FOLLOW-ALONG	-0.168*	0.025	-0.143*
EMPLOYER SUPPORT			
on TRAINING	-0.127*	0.000	-0.127*
on WORK6	0.124*	0.018	0.142*
TRAINING			
on FOLLOW-ALONG	0.292*	0.001	0.293*
on WORK6	-0.163*	0.070*	-0.093
ADVOCACY			
on FOLLOW-ALONG	0.160*	0.008	0.168*
on WORK6	-0.026	0.043*	0.017
FOLLOW-ALONG			
on WORK6	0.236*	0.000	0.236*

* Effect is at least twice as large as its standard error.

-0.163). The overall effect on employment was reduced because of the positive indirect effect of training through follow-along (IE = 0.069). Advocacy had no direct effect on six month employment (Table 12). It did, however, increase the likelihood of employment at six months through its positive effect on follow-along (DE = 0.159).

As with the proportional time long term model, employer support enhanced consumer employment at six months (Table 11 & 12). No other consumer background characteristic nor program component had an appreciable effect on employment.

Consumer function level affected more program components than any other consumer characteristic (Table 11). Higher functioning consumers were better matched to their jobs, and required less training and follow-along support (Table 11). Much of the influence of function level on follow-along was due to direct (-0.154) rather than indirect (-0.104) effects. When effects were estimated using proportional time measures, consumer function level influenced follow-along more through indirect rather than direct effects (Table 7).

Consumer participation in government benefit programs increased the need for consumer training (TE = 0.138). Transportation availability prior to job placement had no effect on any of the program components (Tables 11 & 12); whereas it had effects on training, advocacy, and follow-along support needs when these were measured as a proportion of time a consumer worked (Tables 9 & 10).

Family support and educational experience had no affect on the implementation of the Supported Work Model program components (Tables 11 & 12).

Opportunities for the consumer to interact with nonhandicapped persons on the job decreased the amount of training required by a consumer (Table 12). The total effect of social level on follow-along support was reduced by its positive indirect effect, which operated mostly through advocacy. This suggests that as the number of social contacts for a consumer increased, the employment specialist spent more time advocating for the

consumer. Consumers who required the most training and advocacy support also required the greatest amount of follow-along support (Table 11).

Chapter 5

Discussion

Introduction

Supported employment programs are designed to help individuals with handicaps attain and maintain employment. They differ from more traditional vocational services in that support is provided throughout the consumer's employment tenure (Kiernan & Schalock, 1986; Kregel & Wehman, 1989; Rusch & Hughes, 1989; Wehman & Moon, 1988). The Supported Work Model (Wehman & Kregel, 1985), proposed as a theoretical framework for providing supported work opportunities for individuals with handicaps, has been widely implemented (Wehman, 1988), even though little is known as to how or why the model works.

The services provided under the Supported Work Model typically occur in two phases (Hill, Hill, et al., 1987). The first is a period of intense on-the-job training and advocacy following initial placement and is often called the stabilization period (Hill, Hill, et al., 1987). Job stabilization occurs if a consumer requires support less than 20% of the time worked over eight consecutive weeks (Hill, Hill, et al., 1987). The second phase, job maintenance, is characterized by on-going follow-along support throughout the consumer's employment tenure. If supported employment placements are successful,

training and advocacy should be major contributors to the consumer's job stabilization. Long term employment success should be dependent on the amount of follow-along support the consumer receives. The effects of consumer background characteristics and job site characteristics on either stabilization or long term employment should be minimal at best. This is particularly true of individual job placements since implementation of the program components is tailored to the individual needs of the consumer (Kregel & Wehman, 1989). Any skill deficiencies and job site problems are typically addressed by the employment specialist who works one-on-one with the consumer. As a result, any consumer receiving supported employment services, regardless of background or job site characteristics, should be successful.

A short term supported employment causal model was estimated to determine the effects of consumer background characteristics, job site characteristics, and the supported employment program components of placement (job match), training, and advocacy, on the consumer's employment status at eight weeks. This corresponds to estimating the effects of supported employment on consumer job stabilization. A long term employment causal model was estimated using consumers who were successfully stabilized in their jobs (employed at eight weeks). The long term model examined the effects of all program components as well as consumer background and job site characteristics on employment at six months (job maintenance). By eliminating consumers unemployed at eight weeks, the effects observed should be those which contribute to long term success rather than both stabilization and long term success. The results of this study suggest that the Supported Work Model program components contribute to consumer success as expected.

Short Term Employment Model -- Job Stabilization

Training and advocacy supports are major contributors to consumer employment status at eight weeks. Consumers who receive the greatest number of hours of on-the-job training are those most likely to become stabilized in their job. The effect of training on job stabilization, however, is dependent on the number of hours a consumer works. When training is adjusted by the number of hours a consumer works, consumers who require the most training are those least likely to be employed at eight weeks.

Function level has no direct or total effect on short term employment. Consumer function level, however, may influence the number of hours a consumer works. Schalock et al. (1989) found that consumers who were higher functioning worked more hours per week than consumers who were lower functioning. On the other hand, Trach and Rusch (1989) found a negative correlation between consumer function level and the amount of job maintenance support (training, advocacy, and follow-along) a consumer required. Among consumers in this study there was a negative relationship between function level and the amount of on the job training received. Combined, these suggest that even though successful consumers receive more total hours of training, they may receive proportionately lower amounts of support because they are higher functioning and they work more hours per week. Successful consumers may require more training simply because they work more. For example, if two consumers require the same amount of training per week and they work the same number of hours per week, the consumer who works eight weeks would have more total hours of training than the consumer who only worked five weeks. The result would be a positive relationship between total training and employment, as observed in this study using the total time model.

The total training needs of a consumer are partly determined by the match between the consumer skill level and the skill demands of the job. Even though there was no relationship between the number of hours of training a consumer required and short term employment, it appears there is a certain amount of training that a consumer must receive based on the match between consumer skills and job demands. Consumers with the lowest job match require the most number of hours of training. Trach and Rusch (1989) report a similar relationship.

Advocacy. Advocacy support focuses on enhancing the social environment of the work site for the consumer. While the effects of training on job stabilization are a function of both the total time devoted to the activity and the total time worked, advocacy support effects are influenced by the number of hours a consumer works. Total advocacy support has no effect on employment at eight weeks. Short term employment is more likely, however, when the demand for advocacy support decreases relative to the number of hours the consumer works.

Many supported employment jobs are repetitive in nature (Schalock et al., 1989). Once the skills needed for a particular job are learned, little additional training is necessary. The social environment, however, is not as stable. Many supported employment jobs have a high turnover rate among nonhandicapped employees and job site supervisors (Kroger, 1979). Thus, the employment specialist may be called upon throughout the time the consumer is employed to work with new co-workers and employers (Sale et al., 1989). Maintaining the support of co-workers, employers, and family members can be an on-going task (Karan & Knight, 1986; Kiernan & Stark, 1989; Kochany & Keller, 1981). Unlike training, therefore, advocacy is more likely to be a function of the time a consumer works rather than a function of the total time devoted to advocacy.

Consumers who work fewer hours require advocacy support a greater proportion of their working time. This may be due, in part, to the consumer's function level. There was a negative relationship between consumer function level and the amount of advocacy support for consumers in this study. Schalock et al. (1989) found that consumers who were higher functioning tended to work more hours per week than consumers who were lower functioning. Thus, consumers who are lower functioning may require more advocacy support relative to the number of hours worked than consumers who are higher functioning because lower functioning consumers require more advocacy support and work fewer hours per week.

It was hypothesized that higher functioning consumers would require more advocacy support because they might need help with money and time management skills (Vogelsberg, 1986). Higher functioning consumers received a greater amount of advocacy support than lower functioning consumers, suggesting Vogelsberg (1986) may be correct. When advocacy support was adjusted by the number of hours a consumer worked, however, consumers who were lower functioning required the greater amount of advocacy support. Higher functioning consumers may require more total advocacy support because they typically work more hours per week and they typically work more weeks than their lower functioning colleagues. The pattern observed in this study is similar to the more traditional view, namely, consumers who are lower functioning will require the most support because of their lack of appropriate social and nonvocational skills (Kiernan & Stark, 1989; McLoughlin et al., 1988; Rusch, 1986; Wehman et al., 1987).

Consumer Function Level. Consumer function level influences the amount of services a consumer requires, but not the short term employment of the consumer. Consumers who are lower functioning require more training and advocacy support than consumers

who are higher functioning. Trach and Rusch (1989) found that as average consumer function level increased, the number of program components implemented and the degree of program implementation decreased. These results suggest that as supported employment programs serve more lower functioning consumers, they will have to provide more training and advocacy support services. This may increase the total costs of providing supported employment services, eliminating one of the benefits of supported employment programs to service providers (Hill, Banks, et al., 1987; Noble & Conley, 1987).

Benefits. Quite unexpected was the positive relationship between consumer participation in government benefit programs and short term employment. Government benefit programs are widely thought to be work disincentives for individuals with handicaps (Conley et al., 1986; Kiernan & Schalock, 1989; Rusch, 1986). In recent years a number of legislative and regulatory actions have been taken to make government benefit programs less of a work disincentive (Conley & Noble, 1989; Whitehead, 1989). The recency of many of these actions made it unlikely that they would have influenced consumer participation in the supported employment programs studied.

It is possible that some unmeasured factor associated with participation in benefit programs is producing observed effect, not benefits. The structural effects of consumer background variables on each other were not analyzed. The presence of a moderate correlation between consumer function level and participation in government benefit programs, the possible time precedence of function level, and the relationship between function level and a number of supported employment program components suggests that it may be consumer function level rather than benefits *per se* which is responsible for the relationship observed between benefits and short term employment,

and that consumer function level be specified as a cause of participation in government benefit programs in future studies.

Education. The most recent type of educational experience a consumer had (either in an integrated setting or in a special education center) did not affect consumer employment success or the implementation of supported employment program components. Any kind of experience in an integrated setting is thought to make a positive difference in the overall success of individuals with handicaps (Federal Register, 1987; Kiernan & Stark, 1986; McLoughlin et al., 1988; Wehman, 1981; Will, 1984a). The value of integrated educational experiences on employment success, however, is not clear. The results of this study suggest that integrated educational experiences reduced the the likelihood of employment success. Hasazi et al. (1985) found that individuals who participated in special education programs were more likely to be employed after leaving school than individuals who participated in integrated programs. The most successful participants in a supported work program in Massachusetts were referrals from special education programs (Shestakafsky et al., 1986). Other authors, however, suggest that existing education programs for individuals with handicaps need to be modified to include more integrated work experiences because existing programs fail to provide the experiences individuals with handicaps need in order to be successful (Halpern, 1985; Wehman et al., 1988; Will, 1984a).

It may be that individuals who participate in special education programs receive better social skills training. This is particularly important since most supported employment consumers who lose their jobs do so because of inadequate social and non-vocational skills (Greenspan & Schoutz, 1981; Hanley-Maxwell et al., 1986).

Family Support. Family, especially parental, support is thought to be necessary for successful supported employment placements (Karan & Knight, 1986; Kiernan & Stark, 1986; Kochany & Keller, 1981; Wehman, 1988). Wehman (1988) believes that the lack of family support is one of the major obstacles service providers must overcome when implementing supported employment programs. Therefore it was surprising to find that the level of family support had no effects on either consumer employment success (job stabilization or job maintenance) or the implementation of supported employment program components in this study. The consumers in this study had families (or guardians) who had minor reservations about employment or were highly supportive of employment for their child. Because of the high level of support among families or guardians for supported employment, little is known about the employment success for consumers who lack parental support because they were not represented in this study.

Because many of the consumers in this study were older (average age = 28 years) and higher functioning (average IQ = 57), their parents and guardians may be giving them more independence than if they were younger or lower functioning. Also, since all consumers participating in supported employment programs associated with the RRTC were referrals, referral agents may be referring those individuals who were relatively independent, reasonably assured of employment success, and had strong parental/guardian support (Kregel & Wehman, 1989).

Family support was measured as the degree of support the family had for the consumer's participation in supported employment programs prior to the placement. The actual support the family gives the consumer following placement, however, can change. Some family members, fearful of loss of consumer benefits for, or loss of control over, the consumer, become so disruptive at the job site that the employer must release the consumer (Kochany & Keller, 1981). Therefore, it may be better to measure family support after consumer placement rather than prior to consumer placement.

Other Background Characteristics. Transportation is the number one problem supported employment service providers encounter when making job placements (Kiernan & Brickman, 1988; Wehman, 1988). The lack of transportation is a major factor contributing to consumer unemployment at eight weeks. This suggests that employment specialists should exercise care when placing consumers who do not have transportation at the time of placement. Wehman and Kregel (1985) warn that the overall quality of a supported employment program is irrelevant if the consumer is unable to get to the job site.

Prior work experience in either competitive or integrated settings is thought to contribute to the employment success of individuals with handicaps (Bellamy et al., 1986; Browning et al., 1981; Hasazi et al., 1985; Pumpian et al., 1985). Supported employment programs are designed to minimize the amount of prior work experience a consumer needs in order to be successful on the job (Federal Register, 1987; Kregel & Wehman, 1989; Rusch & Hughes, 1989). The results of this study suggest that prior competitive work experience does reduce the training needs of a consumer, but that prior work experience is not necessary for consumer employment success.

Community based work experiences may have multiple effects on consumer employment. The results of this and other studies (Brown et al., 1983; Pumpian et al., 1988) suggest community based work experiences help consumers learn the necessary skills to be successful on the job. Community based work experiences may also increase the support of family members and employers for vocational programs for individuals with handicaps (Pumpian et al., 1988). Employers who have had successful experiences with employees who have handicaps are more likely to hire individuals with handicaps and encourage other employers to hire individuals with handicaps (Pumpian et al., 1988). This effect of competitive work experience was not examined in this study, and is recommended for further study.

Neither employer support nor job site social integration affected short term employment. During the first weeks following placement, the employment specialist is almost continuously present at the job site (Moon et al., 1986; Sale et al., 1989). This presence may reduce any doubts the employer had about hiring an individual with handicaps. It may also reduce the number and quality of interactions between the consumer and co-workers. By being ever present the consumer, co-workers, and employers may come to depend on the employment specialist to solve any problems which may arise rather than solving the problems themselves. This does not interfere with consumer job stabilization, but it may hinder long term success because the consumer, co-workers, and employers come to rely on the employment specialist rather than natural supports which may exist at the job site (Nisbet & Hagner, 1988).

Long Term Supported Employment Model -- Job Maintenance

The factors which influence the long term employment (job maintenance) of individuals with handicaps were studied using individuals employed eight weeks after initial placement. The only program components expected to have effects on long term employment were monitoring and follow-along support. Consumer background characteristics, job site characteristics, and training/advocacy were not expected to have any effect on employment. Any effects they might have were expected to be on the implementation of the monitoring and follow-along program components.

Follow-Along. Consumer employment success (continuous employment in the same job for six months following placement) depends on the total amount of follow-along support a consumer receives and on the support the employer has for working with indi-

viduals with handicaps. Consumers receiving the most follow-along support, regardless of the number of hours worked, are those most likely to be employed over the long run. This is similar to training in that consumers who are employed at six months may have more opportunity to receive follow-along support than those who were unemployed at that time simply because they worked more, and not because they required more support. This may be the reason for the positive relationship between follow-along support and long term employment. When follow-along support was measured as a proportion of the time the consumer worked, it had no effect on consumer long term employment. This suggests that successful consumers are going to require more services simply because they continue to be employed. Thus, as long as they are employed, they will require follow-along services, adding to the cost of providing supported employment services.

Providing on-going follow-along support to individuals with handicaps is the feature which makes supported employment programs unique among vocational rehabilitation and training programs (Kiernan & Stark, 1986; Kregel & Wehman, 1989; McLoughlin et al., 1988; Rusch & Hughes, 1989). Individuals with moderate and severe handicaps traditionally have been considered unemployable because they required on-going support following the initial training period (Kiernan & Stark, 1986; Wehman & Moon, 1988). These results suggest that on-going follow-along support services contribute to, and are necessary to maintain, consumer employment.

When a consumer is placed in individualized job setting, the amount of support the consumer requires per week typically decreases over time (Johnson & Rusch, 1990; Kregel et al., 1988). One might expect, therefore, that the more successful consumers would be those requiring the least amount of support. The more successful consumers in this study were those who received the most cumulative follow-along support. On a weekly basis the amount of support does decrease relative to the amount of time worked,

suggesting successful consumers do require less support. But, because they are successful, the total amount of follow-along support consumers require is likely to be higher than for unsuccessful consumers.

Employer Support. Little emphasis has been placed on the role of employer support in supported employment programs. Employer support is the only consumer background characteristic or job site characteristic which has an effect on the ability of a consumer to maintain a job. Long term consumer employment is enhanced by employers who are supportive of hiring and working with individuals with handicaps. A consumer may be doing well in a job placement until the consumer is perceived as performing poorly (White, 1986) or loses the support of the employer for some other reason. One positive benefit of the follow-along program is that the employer is assured that he or she can call upon someone else to deal with any problems which may arise (Kregel et al., 1988; Sale et al., 1989). An employer knows from initial placement that should problems arise with the consumer there is someone else who will deal with the problems. This, in ways, makes the placement virtually risk-free for the employer; and it may enhance the support the employer has for working with individuals with handicaps, increasing the likelihood that the consumer will remain employed. Employment specialists and other service providers may enhance employer support for hiring individuals with handicaps by encouraging employers to participate in job site training programs for individuals with handicaps (Pumpian et al., 1986).

Supported Work Program Components. The amount of follow-along support a consumer receives is dependent on the amount of training and advocacy support a consumer needs to become stable on the job as well as the level of work site integration. Consumers who received the most training and advocacy support also received the most follow-along

support services. Part of the increased need for follow-along support is due to the consumers function level. Consumers who are lower functioning require the most follow-along services. Consumer function level has no effect on the consumer's employment status. This suggests that those consumers who maintain long term employment are the ones who receive the most follow-along services, regardless of the consumer's function level.

Job site social integration has no effect on consumer job stabilization, yet it is one of the more important factors contributing to job maintenance. This may be due to the continued presence of the employment specialist at the job site during the stabilization period and subsequent fading following job stabilization. While the employment specialist is at the job site co-workers may be reluctant to interact with the consumer. Nisbet and Hagner (1988) suggest that the presence of the employment specialist may hinder the development of natural supports at the job site. Among the many roles co-workers may assume are trainer, advocate, and evaluator (Rusch et al., 1990). Each of these is a function of the employment specialist either during the initial training period or during the on-going follow-along period. The limited role of co-workers during stabilization suggest Nisbet and Hagner may be correct. Once the employment specialist fades from the job site, however, it appears that natural supports begin to develop. Social integration at the job site reduces the need for follow-along services suggesting that co-workers can be major contributors to the long term success of consumers in their jobs.

Consumer Background Characteristics. None of the consumer background characteristics nor the early program components (placement, training, or advocacy) had an effect on long term employment. Participation in government benefit programs indirectly increases the amount of follow-along when measured as a proportion of the time worked.

It has no overall effect on follow-along support, nor does it have any effect on long term employment. The availability of transportation, likewise, has no effect on employment. Consumers who had available transportation required fewer follow-along supports. This was not surprising. Transportation availability is important for job stabilization. In order for consumers to be stable on the job, they had to get to the job site for a minimum of eight consecutive weeks; suggesting that transportation was not a problem. It is unlikely that transportation would become a problem bearing unusual or unforeseen circumstances.

Summary and Conclusions

The purpose of supported employment programs is to provide work opportunities to all individuals with handicaps. In the purest sense, any consumer receiving supported employment services should be successful. The results of this study suggest that supported employment programs using the Supported Work Model (Wehman & Kregel, 1985) contribute to the employment of a variety of consumers with mental handicaps. The major contributors to consumer short term and long term employment status were program components of the Supported Work Model, not consumer or job site characteristics.

Job Stabilization. Hill, Hill, and others (1987) suggested that supported employment placements occur in two phases. The first, job stabilization, involves placing the consumer on the job site and providing a period of intensive training and advocacy support. During job stabilization consumer characteristics and job site characteristics should impact the implementation of the program, but should have no bearing on the ultimate

success of the consumer. The amount of training a consumer receives and the amount of advocacy support given a consumer while on the job determine whether or not the consumer will be successful. The match between the consumer and the job, however, is not critical for consumer job stabilization. It influences the amount of training a consumer requires, but has no effect on short term employment.

Few consumer characteristics or job site characteristics have effects on consumer employment at eight weeks. Transportation availability is one of the biggest problems facing employment specialists when placing consumers (Kiernan & Brickman, 1988; Wehman & Kregel, 1985). Consumers in this study who did not have transportation at the time they were placed were more likely to lose their jobs before the eighth week than consumers who had transportation.

The other background characteristic which has an effect on short term employment is participation in government programs. Contrary to expectation, government benefits acts as a work incentive. This finding is somewhat of an enigma. It may be due to a poor operationalization of the variable, expressing support as the number of programs rather than as dollars received. A plausible explanation, but the most difficult to accept because of prejudices, is the possibility that consumers receiving benefits are motivated to be more successful in their supported employment placement than consumers not receiving benefits.

Job Maintenance. The second phase of supported employment is the long term maintenance of the consumer on the job. The program component expected to contribute most to long term consumer success was follow-along. Consumer background characteristics, job site characteristics, and other program components were expected to contribute to program implementation, but not long term consumer employment. The results of this study confirm, for the most part, those expectations.

Consumers who receive the most follow-along support are those most likely to be employed at six months. Others report similar findings (Schalock et al., 1989). Equally important to consumer success, however, is employer support. Consumers who have the support of their employers are more likely to maintain employment than those who do not have employer support.

Supported employment programs do increase the employment rate of individuals who have mental handicaps by providing intensive on-the-job training with accompanying advocacy support and on-going follow-along support. This success, however, is tempered by the effects of transportation availability, participation in government benefit programs, and the support of the consumer's employer.

Implementation Concerns. There are some concerns which must be addressed by supported employment providers. The consumer function level influences the implementation of supported employment program components more than any other consumer characteristic, even though it has no overall effect on either job stabilization or job maintenance. Higher functioning consumers require less training, advocacy, and follow-along support than consumers who are lower functioning. But, consumers who receive the greatest number of hours of training are those who are most likely to be employed over the long term. Consumers who are lower functioning will require more services from employment specialists in order to be successfully placed. Supported employment programs are designed to provide employment opportunities for individuals with severe and profound handicaps (Federal Register, 1987; Kiernan & Stark, 1986; Rusch, 1986; Wehman, 1981). There is some question if the target population is being served (Kregel & Wehman, 1989; Rusch & Hughes, 1989; Trach & Rusch, 1989). Less than 10% of the consumers in this study had severe or profound handicaps. If more individuals with severe handicaps receive supported employment services, as required by

federal legislation (DeStafano & Snauwaert, 1987), the per consumer costs of the programs will rise.

One reason for the popularity of supported employment programs is their cost effectiveness (Hill, Banks, et al., 1987; Noble & Conley, 1987). Supported employment programs are labor intensive as opposed to capital intensive (Noble & Conley, 1987). If more consumers who are lower functioning enter supported employment, employment specialists will spend more time providing support services, increasing the costs of the supported employment program. As a result, supported employment programs may no longer be cost effective.

The effects of supported employment on consumer employment success were estimated using data from individuals who were typically higher functioning. The results of this study suggest that the Supported Work Model of Wehman and Kregel (1985) is effective in increasing consumer employment. It is difficult to predict what changes, if any, will occur in the effects observed as more consumers who are lower functioning receive services (Trach & Rusch, 1989). Further study is needed to understand the effects of supported employment programs on the employment outcomes of individuals who are lower functioning as well as those who have primary handicaps other than mental retardation.

Recommendations

Program Implementation. Service providers can and should recruit or encourage the referral of more individuals who are lower functioning. The results of this study suggest that consumer employment longevity is independent of function level. There are nu-

merous reasons why the primary consumers receiving services are higher functioning (Kregel & Wehman, 1989).

Consumer background characteristics, for the most part, do not affect consumer employment. The three characteristics which do have an effect on job stabilization and job maintenance are critical and can be influenced by the employment specialist, to some degree, prior to placing the consumer. Transportation arrangements should be made prior to placement rather than after placement. Placements should be made with employers who are supportive of hiring and working with individuals who have handicaps. Little, however, can be done about the government support benefits a consumer receives. An employment specialist should be aware that participation in benefit programs can influence consumer employment success and should ensure that appropriate advocacy activities are planned to enhance consumer employment success.

Long term consumer success is dependent on having employer support. Employment specialists are cautioned against "forcing" individuals with handicaps on employers, who are somewhat reluctant about hiring individuals with handicaps (Kiernan & Schalock, 1989; Kregel et al., 1988; Moon et al., 1986). Successful consumers are those who have the initial support of their employer. Employment specialists should take care when placing consumers to ensure that employers are, if possible, both positively disposed toward hiring individuals with handicaps and toward the particular consumer being placed on the job site.

Future Research. Supported employment programs are designed to provide employment services for any individual with a severe or profound handicap. Historically, service agencies have provided services to individuals with mild or moderate handicaps. Service agencies, however, are being encouraged to provide services for individuals with severe and profound handicaps. The results of this study suggest that the level of consumer

handicap can affect the implementation of supported employment programs. Few consumers in this study had severe or profound handicaps. Further study is needed to determine the effects handicap level has on supported employment program implementation and consumer employment outcomes.

Service agencies are now implementing the Supported Work Model to provide services for individuals with primary handicaps other than mental retardation (Wehman et al., 1988). Little is known, however, about the effects of different handicapping conditions on either supported employment program implementation or consumer employment outcomes. Further research is recommended.

Consumer gender had no effects on the implementation of the Supported Employment Model or consumer employment outcome in a preliminary study. There may be some interaction between consumer gender and the implementation of supported employment program components and consumer employment outcomes. The sample size was too small to estimate separate causal models by gender in the present study. Further study is recommended to determine the role of gender in providing supported employment services.

The effects of a consumer's socioeconomic status (SES) were not examined in this study. The ability of a consumer or the consumer's family to meet the consumer's needs is likely to affect the implementation of the Supported Work Model and consumer employment. Consumer's from within a high SES background may be less likely to participate in government benefit programs or may be less likely to have transportation problems, among other things. The effects of consumer SES should be examined in future studies.

Data Base. In order to understand the efficacy of a program, accurate data are required (Halpern, in press). Several variables which would have been helpful in this study and for future studies are:

1. Actual time a consumer works;
2. Adaptability score for consumer;
3. Consumer's or consumer's family socioeconomic status;
4. Quality measures for service variables;
5. Family support following placement; and
6. Dollar value of government benefit support.

Additional Limitations

Care should be exercised when interpreting the results. The consumers in this study were limited to individuals whose primary handicap was mental retardation. The effects of background characteristics and the implementation of supported employment program components may vary for consumers having different primary handicaps (Wehman & Moon, 1988). The population was further restricted to consumers receiving services from providers in Virginia. Local economic conditions may affect employment opportunities for individuals with handicaps (Kiernan & Schalock, 1989; Stark & Goldsbury, 1988), limiting the generalizability of these results to other states. The consumers in this study were also referrals to the program and may not be typical of all individuals with mental handicaps.

Secondary analyses of data sets have numerous inherent problems (Kiecolt & Nathan, 1985; Stewart, 1984). Among those are operationalization of the variables. In

order to understand how a program works, it is important to use valid measures of the program components (Halpern, in press). When working with secondary data sets, one uses the best *available* measure, rather than the most appropriate measure. Several examples from this study are BENEFITS and total work time for the consumer. Benefits could only be measured by the number of benefits a consumer received. A better measure may be the total benefit dollars a consumer received so the economic impact of benefits could examined. The only measure for the time a consumer worked provided an estimate of the maximum number of hours the consumer could work.

There are large number of potential outcomes of supported employment programs (McDonnel et al., 1989; Schalock et al., 1989; Trach & Rusch, 1989; Wacker et al., 1989). This study only examined one, employment success. Even though supported employment works as expected, its impact on other types of outcomes cannot be inferred from this study. Further studies are recommended using different outcomes.

A problem common to retention studies is determining persistence and withdrawal (Tinto, 1987). An individual not returning to the particular setting being studied does not mean he or she has *dropped out* or has been unsuccessful. In this study, the effects of supported employment on a consumer's success in his or her first job were examined. It is possible that a consumer left the first job because of promotion or some other type of job advancement; both measures of successful placements. Since the consumer did not continue in his or her first job, he or she was considered a failure, even though the program was more than successful. A future study examining the effects of supported employment on consumers receiving multiple placements is needed.

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Appendix A.

Please overlay your letterhead in this space. The letterhead should designate the supported employment provider, not a state agency which represents more than one provider. Take care not to cover the page number designation or the title of the form. Also, do not change the layout of the form in any way.

CONSUMER INFORMATION/REFERRAL FORM (Revised 9/87)

Instructions: Please provide as much information as possible on all items.

Consumer:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

Date: __ __ /__ __ /__ __
mo day yr

Referral Agency:
Name:_____

I.D. Code:_____

Date of Referral: __ __ /__ __ /__ __
mo day yr

Person completing this form:_____

Case Managers: DRS:_____

MHMR:_____

Primary person responsible for this Referral:
_____
Last First
_____
Street
_____ _____ _____
City State Zip Code
( )
Work Phone

Consumer Information:

1. Name of County or City of Residence:_____

2. Sex:_____ 3. Date of Birth:__ __/__ __/__ __
mo day yr

4. Address and Phone Number of Consumer:
_____
Street
_____ _____ _____
City State Zip code
( )
(Area Code) Home Phone

4a. Current residential situation (Select one only): _____
1 = Independent
2 = Supported living arrangement
3 = Sponsored placement (foster care)
4 = Domiciliary care apartment (home for adults)
5 = Supervised apartment
6 = Parents
7 = Other relatives
8 = Group home/halfway house
9 = Other (Specify):_____

5. Race/Ethnic origin:_____
1 = American Indian
2 = Asian
3 = Black
4 = Hispanic
5 = White
6 = Other (Specify):_____

6. Total number of years in public school:_____

6a. Name of last school attended: _____

6b. Approximate number of years in that school:_____

6c. What type of school was this (enter 1 or 2)? _____
1. A school for students both with and without handicaps
2. A special education center for students with handicaps

7. Excluding SSI payments or other financial aid or trust payments, approximately how much did the consumer earn last year (sheltered or regular job)? If not employed, please enter 0._____

Parent / Guardian / Caregiver Information:

8. Name: _____ _____
Last First

9. Address:_____
Street

_____ _____ _____
City State Zip code

( ) ( )
Home Phone Work Phone

10. Type of Relationship:_____
1 = Natural parent
2 = Relative (including legal guardian)
3 = Non-Relative (legal guardian/friend/advocate)
4 = Group home or other service provider
5 = None
6 = Other (Specify:_____)

History of Services:
Has this consumer previously received services in the following areas:

11. Enrollment in an adult service or activity center: Yes / No
If yes; How many months (Cum. Total):_____
Did this consumer's program include ongoing community-based integration? Yes / No

12. Employment at a sheltered workshop: Yes / No
If yes; How many months (Cum. Total):_____
Did this consumer's program include ongoing community-based integration? Yes / No

13. Employed competitively in community job(s): Yes / No
If yes; How many months (Cum. Total):_____

14. Institutionalization in a state or private residential facility? Yes / No
If yes, how many years/months (Cum. Total)?____/____

15. Government Financial Aid:	Ever	Past month
1 = SSI	Yes / No	Yes / No
2 = SSDI	Yes / No	Yes / No
3 = Medicaid	Yes / No	Yes / No
4 = Medicare	Yes / No	Yes / No
5 = Food Stamps	Yes / No	Yes / No
6 = Public Assistance(Welfare)	Yes / No	Yes / No
7 = Other (Specify:_____)	Yes / No	Yes / No

15a. Total monthly income received from all government financial aid in the past month:_____

16. If not served by this vendor, what is this consumer's probable alternative program?_____
- 00 = No service or employment
- 01 = Institutional
- 02 = Day treatment
- 03 = Psychosocial rehabilitation
- 04 = Adult developmental/Activity center
- 05 = Work activity or Sheltered employment
- 06 = Entrepreneurial
- 07 = Mobile work crew
- 08 = Enclave
- 09 = Supported job
- 10 = Supported competitive employment
- 11 = Public school program
- 12 = Other (Specify:_____)

16a. If public school is the alternative program, what will the alternative program be after age 22?_____
- 13 = No service or employment
- 14 = Institutional
- 15 = Day treatment
- 16 = Psychosocial rehabilitation
- 17 = Adult developmental/ Activity center
- 18 = Work activity or Sheltered employment
- 19 = Entrepreneurial
- 20 = Mobile work crew
- 21 = Enclave
- 22 = Supported job
- 23 = Supported competitive employment
- 24 = Other (Specify:_____)

Consumer Disability

17. Using the following categories, indicate the applicable disabilities in order of severity to this consumer. If there are no secondary and/or tertiary disabilities, write "none" in the space provided. If more than three disabilities apply, use the comments/specifics section to describe them. If this consumer has been "dually diagnosed", indicate Emotional Disorder and Mental Retardation as the primary and secondary disabilities.

Primary Disability:_____
Secondary Disability:_____
Tertiary Disability:_____

- 1 = Autism
- 2 = Cerebral palsy (including spastic diplegia)
- 3 = Convulsive disorder
- 4 = Cystic fibrosis
- 5 = Emotional disorder (Including chronic mental illness)
- 6 = Head injury
- 7 = Hearing impairment
- 8 = Juvenile arthritis
- 9 = Mental retardation
- 10 = Multiple sclerosis
- 11 = Muscular dystrophy
- 12 = Specific learning disability
- 13 = Speech / Language impairment
- 14 = Spina bifida
- 15 = Spinal cord injury
- 16 = Visual impairment
- 17 = Other neurological impairment (Specify:_____)
- 18 = Other physical impairment (Specify:_____)
- 19 = Other genetic disorder (Specify:_____)

17a. Comments/Specifics:_____

_____

_____

18. If mental retardation is listed as a disability, please provide IQ data upon which this diagnosis is based.

a. IQ score:_____ b. IQ test name:_____
1 = Stanford-Binet
2 = WISC-R, WAIS-R, Wechsler
3 = Other
(Specify:_____)

c. Retardation level:_____
1 = Borderline
2 = Mild
3 = Moderate
4 = Severe
5 = Profound

d. Date of IQ test: __ __/__ __/__ __
mo day yr
(Please give most recent test information)

19. Ambulation:_____
1 = No impairment
2 = Unsteady gait/excessively slow
3 = Ambulation aides (i.e. crutches, canes, etc.)/independent
4 = Wheelchair/independent
5 = Ambulation aides/requires assistance
6 = Wheelchair/requires assistance

20. Sight:_____
0 = No impairment (include vision deficit that is correctable)
1 = Visually impaired (not correctable)
2 = Profoundly/Legally blind

21. Hearing:_____
0 = No impairment (include hearing deficit that is correctable)
1 = Hearing impaired (not correctable by hearing aide)
2 = Profoundly/Legally deaf

22. Motor-Fine:_____
0 = No impairment that affects work activities
1 = Use of both hands somewhat limits work activities
2 = Use of right hand somewhat limits work activities
3 = Use of left hand somewhat limits work activities
4 = Use of both hands severely limits work activities
5 = Use of right hand severely limits work activities
6 = Use of left hand severely limits work activities

23. Speech and Language Characteristics:_____
1 = Speaks clearly in sentences
2 = Speaks in sentences (unclear)
3 = Uses key words (vocab. under 10 words)
4 = Limited use of manual signs/ pictures
5 = Sounds/Gestures
6 = Fluent sign or picture symbol communication
7 = No meaningful communication system

24. Other additional label. Check all that apply, and also indicate the primary two labels in the spaces provided:

Primary: _____
Secondary: _____

____ 1 = None
____ 2 = Alcohol abuse
____ 3 = Chronic health problems (other than disability listed above)
____ 4 = Criminal conviction
____ 5 = Drug abuse
____ 6 = Obesity
____ 7 = Physically aggressive
____ 8 = Self abusive
____ 9 = Self stimulatory behavior
____ 10 = Sexually aggressive
____ 11 = Sexually exploited
____ 12 = Social maladjustment (Juvenile delinquency, petty thievery, property destruction, etc)
____ 13 = Verbally abusive
____ 14 = Other (Specify:_____)

DRS Information

25. Previous or current services from DRS: Yes / No

26. Current DRS case status for this consumer is (Enter DRS code):_____

27. What is the DRS severity status of this consumer?_____
1-Severe
2-Non-severe

Academic Skills

28. Arithmetic Skills:_____
1 = None
2 = Simple counting
3 = Simple addition/subtraction (numbers over 10)
4 = Intermediate skills (multiplication/division)
5 = Advanced math skills

29. Word Recognition:____
1 = None
2 = Discriminates between common symbols
3 = Recognizes some words
4 = Simple reading (second grade level; reads parts of newspaper)
5 = Advanced reading skills (above second grade level)

30. Time Awareness:_____
1 = Unaware of time
2 = Stops without prompting for breaks and lunch
3 = Can utilize hour hand for appointments
4 = Understands hours and minutes
5 = Tells time without error in daily life

Please feel free to give any other pertinent information:_____

_____

_____

FORM DEVELOPED BY THE REHABILITATION RESEARCH AND TRAINING CENTER / VIRGINIA COMMONWEALTH UNIVERSITY, IN COOPERATION WITH THE VIRGINIA DEPARTMENTS OF MENTAL HEALTH AND MENTAL RETARDATION AND REHABILITATIVE SERVICES (Revised 9/87).

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CONSUMER EMPLOYMENT SCREENING FORM (Revised 4/87)

Consumer:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

Staff member completing this form:
Name: _____

I.D. Code: _____

Date of screening (month/day/year):__ __/__ __/__ __

Type of screening: Initial_____ Ongoing/Employed_____ Ongoing/Unemployed_____

Total number of hours per week presently working:_____ Months per year:_____

General Directions: PLEASE DO NOT LEAVE ANY ITEM UNANSWERED!

Indicate the most appropriate response for each item based on observations of the consumer and interviews with individuals who know the consumer (i.e. family members, adult service providers, school personnel, employers).

1. Availability: (Circle Yes or No for each item)	Will Work Weekends	Will Work Evenings	Will Work Part-Time	Will Work Full-Time
	Yes / No	Yes / No	Yes / No	Yes / No

Specifics/Comments:

---

2. Transportation: (Circle Yes or No for each item)	Transportation Available	Access to Specialized Travel Services	Lives on Bus Route	Family Will Transport	Provides Own Transp. (Bike, Car, Walks, Etc.)
	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No

Specifics/Comments:

---

3. Strength;
Lifting and Carrying: Poor (<10 lbs)____ Fair (10-20 lbs)____ Average (30-40 lbs)____ Strong (> 50 lbs)____

Specifics/Comments:

---

4. Endurance: (Without Break) Works < 2 Hours____ Works 2-3 Hours____ Works 3-4 Hours____ Works > 4 Hours____

Specifics/Comments:

---

5. Orienting: Small Area Only ____ One Room____ Several Rooms ____ Building Wide ____ Building and Grounds____

Specifics/Comments:

---

6. Physical Mobility: Sit/Stand in One Area____ Fair Ambulation____ Stairs/Minor Obstacles ____ Full Physical Abilities____

Specifics/Comments:

---

7. Independent Work Rate: (No Prompts) Slow Pace____ Steady/ Average Pace____ Above Average/ Sometimes Fast Pace____ Continual Fast Pace____

Specifics/Comments:

---

8. Appearance: Unkempt/ Poor Hygiene____ Unkempt/ Clean ____ Neat/Clean but Clothing Unmatched ____ Neat/Clean and Clothing Matched ____

Specifics/Comments:

---

9. Communication: Uses Sounds/ Gestures____ Uses Key Words/Signs____ Speaks Unclearly____ Communicates Clearly, Intelligible to Strangers ____

Specifics/Comments:

---

10. Appropriate Social Interactions: Rarely Interacts Appropriately____ Polite, Responses Appropriate____ Initiates Social Interactions Infrequently____ Initiates Social Interactions Frequently____

Specifics/Comments:

---

11. Unusual Behavior: Many Unusual Behaviors ____ Few Unusual Behaviors ____ No Unusual Behaviors ____

Specifics/Comments:

---

12. Attention to Task/ Perseverance: Frequent Prompts Required____ Intermittent Prompts/High Supervision Required ____ Intermittent Prompts/Low Supervision Required ____ Infrequent Prompts/Low Supervision Required____

Specifics/Comments:

---

13. Independent Sequencing of Job Duties: Cannot Perform Tasks in Sequence ____ Performs 2-3 Tasks in Sequence ____ Performs 4-6 Tasks in Sequence ____ Performs 7 or More Tasks in Sequence____

Specifics/Comments:

---

14. Initiative/ Motivation: Always Seeks Work ____ Sometimes Volunteers____ Waits for Directions____ Avoids Next Task ____

Specifics/Comments:

---

15. Adapting to Change: Adapts to Change____ Adapts to Change With Some Difficulty____ Adapts to Change With Great Difficulty____ Rigid Routine Required _____

Specifics/Comments:

---

16. Reinforcement Needs: Frequent Required____ Intermittent (daily) Sufficient____ Infrequent (weekly) Sufficient____ Pay Check Sufficient____

Specifics/Comments:

---

17. Family Support: Very Supportive of Work ____ Supportive of Work With Reservations____ Indifferent About Work____ Negative About Work ____

Specifics/Comments:

---

18. Consumer's Financial Situation: Financial Ramifications No Obstacle ____ Requires Job with Benefits____ Reduction of Financial Aid is a Concern____ Unwilling to Give up Financial Aid____

Specifics/Comments:

---

19. Discrimination Skills: Cannot Distinguish between Work Supplies ____ Distinguishes between Work Supplies with an External Cue ____ Distinguishes Between Work Supplies ____

Specifics/Comments:

---

20. Time Awareness: Unaware of Time and Clock Function ____ Identifies Breaks and Lunch ____ Can Tell Time to the Hour ____ Can Tell Time in Hours and Minutes ____

Specifics/Comments:

---

21. Functional Reading: None____ Sight Words/ Symbols ____ Simple Reading____ Fluent Reading____

Specifics/Comments:

---

22. Functional Math: None____ Simple Counting____ Simple Addition/ Subtraction ____ Computational Skills ____

Specifics/Comments:

---

23. Independent Street Crossing: None____ Crosses 2 Lane Street with Light____ Crosses 2 Lane Street W/O Light____ Crosses 4 Lane Street with Light____ Crosses 4 Lane Street W/O Light____

Specifics/Comments:

---

24. Handling Criticism/ Stress: Resistive/ Argumentative____ Withdraws into Silence____ Accepts Criticism/ Does not Change Behavior ____ Accepts Criticism/ Changes Behavior____

Specifics/Comments:

---

25. Acts/Speaks Aggressively: Hourly____ Daily____ Weekly____ Monthly____ Never____

Specifics/Comments:

---

26. Travel Skills: (Circle Yes or No for each item)

Requires Bus Training	Uses Bus Independently/ No Transfer	Uses Bus Independently/ Makes Transfer	Able to Make Own Travel Arrangements
Yes / No	Yes / No	Yes / No	Yes / No

Specifics/Comments:

---

27. Benefits consumer needs (Circle Yes or No for each choice):

Yes / No 0 = None
Yes / No 1 = Sick Leave
Yes / No 2 = Medical/Health Benefits
Yes / No 3 = Paid Vacation/Annual Leave
Yes / No 4 = Dental Benefits
Yes / No 5 = Employee Discounts
Yes / No 6 = Free or Reduced Meals
Yes / No 7 = Other(specify):_____

---

28. CHECK ALL THAT CONSUMER HAS PERFORMED:

Bus Tables_____	Sweeping ____	Dish Machine Use ____	"Keeping Busy"____
Food Prep._____	Assembly ____	Mopping (Indust.)____	Clerical ____
Buffing _____	Vacuuming ____	Food Line Supply ____	Pot Scrubbing ____
Dusting _____	Restroom Cleaning____	Trash Disposal ____	Other _____
Stocking _____	Washing Equipment____	Food Serving ____	_____

Medications?_____

Medical Complications/Conditions?_____

Additional Comments:_____

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JOB SCREENING FORM (Revised 9/87)

Please complete one Job Screening Form for each job the consumer had during the period in question. All items refer to this particular position at this particular company for this particular location.

Consumer:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

Staff member completing this form:
Name:_____

ID Code:_____

Company:
Name:_____

ID Code:_____

Screening Date:__ __ /__ __/__ __
mo day yr

Type of Service/Employment for this report(Select one):_____
1 = Work activity or Sheltered employment
2 = Entrepreneurial
3 = Mobile work crew
4 = Enclave
5 = Supported job
6 = Supported competitive employment
7 = Time-limited (No on-going services anticipated)
8 = Other (Specify:_____)

Type of screening: Initial____ On-going____ Final____

Job Title:_____

Current hourly wage (or wage at last date of employment in this position):_____

Did a wage change occur since the last Job Screening or Job Update? Yes____ No____
If yes, then complete this section:
Hourly rate changed from $_____ to $_____ on _ _/_ _/_ _
Hourly rate changed from $_____ to $_____ on _ _/_ _/_ _

Number of Hours Per Week:_____ Months Per Year:_____

If less than 12 months per year, what months is the job not available?_____

Number of employees in this company at this location: _____
Number of employees without disabilities in immediate area (50 ft. radius):_____

Number of other employees with disabilities:_____;
In immediate area (50 ft. radius):_____

Number of other employees in this position:_____;
During the same hours:_____

General Directions: PLEASE DO NOT LEAVE ANY ITEM UNANSWERED!

Indicate the most appropriate response for each item based on observations of the job and interviews with employers, supervisors, and coworkers. Also circle CI (critically important), I (important), LI (less important), or NI (not important) for each item, to indicate its level of importance in this position.

---

1. Schedule: (Circle Yes or No for each item)	Weekend Work Required	Evening Work Required	Part-Time Job	Full-Time Job
	Yes / No	Yes / No	Yes / No	Yes / No

CI / I / LI / NI
Specifics/Comments:

---

2. Travel Location (Circle Yes or No for each item)	On Public Transportation Route	On Handicapped Transportation Route
	Yes / No	Yes / No

CI / I / LI / NI
Specifics/Comments:

---

3. Strength; Lifting and Carrying:	Very Light Work (<10 lbs) ____	Light Work (10-20 lbs)____	Average Work (30-40 lbs)____	Heavy Work (>50 lbs)____

CI / I / LI / NI
Specifics/Comments:

---

4. Endurance: (No breaks)	Work Required for <2 hours____	Work Required for 2-3 hours____	Work Required for 3-4 Hours____	Work Required for >4 hours____

CI / I / LI / NI
Specifics/Comments:

---

5. Orienting:	Small Area Only ____	One Room____	Several Rooms ____	Building Wide ____	Building and Grounds____

CI / I / LI / NI
Specifics/Comments:

---

6. Physical Mobility:	Sit / Stand In One Area____	Fair Ambulation Required ____	Stairs / Minor Obstacles ____	Full Physical Requirements____

CI / I / LI / NI
Specifics/Comments:

---

7. Work Pace:	Slow Pace____	Average Steady Pace____	Sometimes Fast Pace____	Continual Fast Pace____

CI / I / LI / NI
Specifics/Comments:

---

8. Appearance Requirements: Grooming of Little Importance____ Cleanliness Only Required____ Neat and Clean Required____ Grooming Very Important____

CI / I / LI / NI
Specifics/Comments:

---

9. Communication Required: None/Minimal____ Key Words/ Signs Needed____ Unclear Speech Accepted ____ Clear Speech in Sentences/ Signs Needed____

CI / I / LI / NI
Specifics/Comments:

---

10. Social Interactions: Social Interactions Not Required____ Appropriate Responses Required ____ Social Interactions Required Infrequently____ Social Interactions Required Frequently ____

CI / I / LI / NI
Specifics/Comments:

---

11. Behavior Acceptance Range: Many Unusual Behaviors Accepted ____ Few Unusual Behaviors Accepted ____ No Unusual Behaviors Accepted ____

CI / I / LI / NI
Specifics/Comments:

---

12. Attention to Task / Perseverence: Frequent Prompts Available____ Intermittent Prompts/High Supervision Available ____ Intermittent Prompts/Low Supervision Available ____ Infrequent Prompts/Low Supervision Available ____

CI / I / LI / NI
Specifics/Comments:

---

13. Sequencing of Job Duties: Only One Task Required at a Time ____ 2-3 Tasks Required in Sequence ____ 4-6 Tasks Required in Sequence ____ 7 or more Tasks Required in Sequence____

CI / I / LI / NI
Specifics/Comments:

---

14. Initiation of Work / Motivation: Initiation of Work Required ____ Volunteering Helpful ____ Staff will Prompt to Next Task____

CI / I / LI / NI
Specifics/Comments:

Indicate the most appropriate response for each item based on observations of the job and interviews with employers, supervisors, and coworkers. Also circle CI (critically important), I (important), LI (less important), or NI (not important) for each item, to indicate its level of importance in this position.

---

15. Daily Changes In Routine: 7 or More Changes ____ 4-6 Task Changes____ 2-3 Task Changes____ no Task Changes____

CI / I / LI / NI
Specifics/Comments:

---

16. Reinforcement Available: Frequent Reinforcement____ Reinforcement Intermittent (daily) ____ Reinforcement Infrequent (weekly) ____ Minimal Reinforcement/ (pay check)____

CI / I / LI / NI
Specifics/Comments:

---

17. Employer Attitude: Very Supportive of Workers with Disabilities____ Supportive with Reservations____ Indifferent to Workers with Disabilities____ Negative toward Workers with Disabilities____

CI / I / LI / NI
Specifics/Comments:

---

18. Employer's Financial Requirements: Financial Incentives Not Necessary____ Tax Credit or Incentive (e.g., TJTC, OJT)____ Subminimum Wage ____

CI / I / LI / NI
Specifics/Comments:

---

19. Object Discrimination: Does Not Need to Distinguish between Work Supplies ____ Must Distinguish between Work Supplies with an External Cue ____ Must Distinquish Between Work Supplies ____

CI / I / LI / NI
Specifics/Comments:

---

20. Time: Time Factors Not Important____ Must Identify Breaks / Meals / Etc. ____ Must Tell Time to the Hour ____ Must Tell Time to the Minute____

CI / I / LI / NI
Specifics/Comments:

---

21. Functional Reading: None____ Sight Words/ Symbols ____ Simple Reading____ Fluent Reading____

CI / I / LI / NI
Specifics/Comments:

---

22. Functional Math: None____ Simple Counting____ Simple Addition/ Subtraction ____ Complex Computation Skills ____

CI / I / LI / NI
Specifics/Comments:

---

23. Street Crossing: None____ Must Cross 2 Lane Street With Light____ Must Cross 2 Lane Street W/O Light ____ Must Cross 4 Lane Street With Light____ Must Cross 4 Lane Street W/O Light ____

CI / I / LI / NI
Specifics/Comments:

---

24. Visibility to Public: Consumer not Visible____ Occasionally Visible ____ Regularly Visible____ Visible Throughout the Day/Ongoing____

CI / I / LI / NI
Specifics/Comments:

---

25. Benefits of Job:
Yes/No 0 = None
Yes/No 1 = Sick Leave
Yes/No 2 = Medical/Health Benefits
Yes/No 3 = Paid Vacation/Annual Leave
Yes/No 4 = Dental Benefits
Yes/No 5 = Employee Discounts
Yes/No 6 = Free or Reduced Meals
Yes/No 7 = Other(Specify):_____

---

26. Level of Social Contact: (circle one)

(0) - Employment in a segregated setting in which the majority of interactions with persons without disabilities are with caregivers or service providers. Example: Adult Activity Center.

(1) - Employment in an integrated environment on a shift or position which is isolated. Contact with coworkers without disabilities or supervisors is minimal. Example: Night Janitor.

(2) - Employment in an integrated environment on a shift or position which is relatively isolated. Contact with coworkers without disabilities or supervisors is available at lunch or break. Example: Pot Scrubber.

(3) - Employment in an integrated environment in a position requiring a moderate level of task dependency and coworker interaction. Example: Dishwasher required to keep plate supply stacked for cooks.

(4) - Employment in an integrated environment in a position requiring a high degree of task dependency and coworker interaction and/or high level of contact with customers. Example: Busperson/Porter.

---

27. CHECK ALL THAT APPLY TO POSITION:

Bus Tables____	Sweeping ____	Dish Machine Use ____	"Keeping Busy"____
Food Prep.____	Assembly ____	Mopping (Indust.)____	Clerical ____
Buffing ____	Vacuuming ____	Food Line Supply ____	Pot Scrubbing ____
Dusting ____	Restroom Cleaning____	Trash Disposal ____	Other _____
Stocking ____	Washing Equipment____	Food Serving ____	_____

COMMENTS:

Rate of employee turnover (annual percentage):

Overall: _____ This position: _____

Number of supervisors:_____ Rate of Supervisor Turnover:_____

Written job description available? _____

What are absolute "don'ts" for an employee in this position (Manager's pet peeves, reasons for dismissal, etc.)?_____

_____

_____

Environmental characteristics (physical barriers, temperature extremes, etc.):

_____

_____

_____

_____

Additional Comments:_____

_____

_____

_____

_____

_____

_____

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PLACEMENT REPORT (Revised 9/87)

Consumer:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

Staff person assigned to this consumer:
Name:_____

I.D. Code:_____

Date: __ __/__ __/__ __
mo day yr

Person Completing this Form:_____

Current Case Managers for this Consumer DRS: _____

Date of Hire: __ __/__ __/__ __ MHMR: _____
mo day yr

If After Date of Hire, Date Services by this Program Began: __ __/__ __/__ __
mo day yr

Company Name: _____

Street: _____

City: _____ State: _____

Zip Code: _____ Phone #: (_____)_____

1. Type of Company:_____
   1 = Food
   2 = Janitorial
   3 = Industrial(factory, etc.)
   4 = Service provider (church/park/agency)
   5 = Commercial(business/store/shop)
   6 = Construction
   7 = Education
   8 = Health care
   9 = Lodging
   10 = Other (Specify:_____)

2. Affiliation of Company:_____
   1 = Private/profit
   2 = Private non-profit
   3 = Local government
   4 = State government
   5 = Federal government

Consumer Information

3. Residential situation at time of placement:_____
   1 = Independent
   2 = Supported living arrangement
   3 = Sponsored placement (foster care)
   4 = Domiciliary care apartment (home for adults)
   5 = Supervised apartment
   6 = Parents
   7 = Other relatives
   8 = Group home/ halfway house
   9 = Other (Specify:_____)

4. Transportation to work used at time of placement:_____
   1 = Independent use of public transportation
   2 = Walks/rides bike or moped
   3 = Dependent use of public transportation (needed bus training)
   4 = Arranged paid car pool
   5 = Parent/friend drives
   6 = Handicapped transportation
   7 = Taxi
   8 = Other (Specify:_____)
   9 = Drives own vehicle

Please provide the following information on the individual who hired this consumer.

5. Name:_____

6. Age:_____ 1 = Under 30 2 = 30-45 3 = 45-60 4 = Over 60 5 = Unknown

7. Sex:_____ 1 = Male 2 = Female 3 = Unknown

8. Years of Education: _____ 1 = No college 2 = College 3 = Unknown

9. Years with Company:_____ 1 = Less than 1 year 2 = 1-2 years 3 = 2-5 years 4 = Over 5 years 5 = Unknown

	Yes	No	Unknown
10. Previous hiring & working history with handicapped:	___	___	___
11. Personal experience with handicapped(friend or family):	___	___	___

Please list any additional contact persons (CP) who should be added to the data base to receive periodic reports on this consumer:

1. Agency name_____

   CP-name (last)_____ (first)_____

   Street_____ City_____ State_____

   Zip Code_____ Phone #(_____)_____

2. Agency name_____

   CP-name (last)_____ (first)_____

   Street_____ City_____ State_____

   Zip Code_____ Phone #(_____)_____

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SEPARATION REPORT (Revised 9/87)

Consumer:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

Staff person assigned to this consumer at time of separation:
Name:_____

I.D. Code:_____

Company:
Name:_____

I.D. Code:_____

Date of Report: __ __/__ __/__ __
mo day yr

Person Completing this Form:_____

Current Case Managers: DRS:_____

MHMR:_____

Date of Separation: __ __/__ __/__ __
mo day yr

Please indicate the major contributing factor to the separation of this consumer in this job.

1a. Type of separation:_____
1 = Resigned
2 = Laid off
3 = Terminated
4 = Leave of absence
5 = Retired
6 = Deceased

1b. Primary reason for separation (check only one):_____
1 = Transportation problems
2 = Moved away
3 = Does not want to work
4 = Parent/guardian initiated
5 = Economic situation, or business closed
6 = Slow work
7 = Low quality work
8 = Poor appearance
9 = Poor social skills
10 = Poor attendance/ tardiness
11 = Insubordinate/ aggressive/ violent
12 = Aberrant behavior
13 = Parent/guardian interference
14 = Poor work attitude
15 = Employer/co-workers uncomfortable
16 = Financial aid interference
17 = Required continual prompting
18 = Medical or health problems
19 = Poor job match (Explain:_____)
20 = Seasonal lay off
21 = Took better job
22 = Criminal behavior
23 = Retired
24 = Deceased
25 = Other (Specify:_____)

2. Following separation from this service/employment situation, is the consumer still considered to be a candidate for the services of this program (That is, the consumer returns to the referral pool, and will be actively considered for replacement)? ____
   1 = Yes
   2 = No

IF THE ANSWER TO ITEM 2 IS "NO", A DISCHARGE REPORT SHOULD ALSO BE FILLED OUT AT THIS TIME.

Please provide information about the individual who separated this consumer from this job, or the current supervisor when the consumer left the job.

3. Name:_____

4. Age:_____
   1 = under 30
   2 = 30-45
   3 = 45-60
   4 = over 60
   5 = unknown

5. Sex:_____ 1 = male 2 = female 3 = Unknown

6. Education:_____ 1 = No College 2 = College 3 = Unknown

7. Years with company:_____
   1 = Less than 1 year
   2 = 1-2 years
   3 = 2-5 years
   4 = Over 5 years
   5 = Unknown

	Yes	No	Unknown
8. Previous history of working with handicapped?:	___	___	___
9. Personal experience with handicapped(friend or family):	___	___	___

Please list any additional contact persons who should be added to the data base to receive periodic reports on this consumer:

1. Agency name_____
   CP-name (last)_____ (first)_____
   street_____ city_____state_____
   zip code_____ phone(___)_____
2. Agency name_____
   CP-name (last)_____ (first)_____
   street_____ city_____state_____
   zip code_____ phone(___)_____

FORM DEVELOPED BY THE REHABILITATION RESEARCH AND TRAINING CENTER / VIRGINIA COMMONWEALTH UNIVERSITY, IN COOPERATION WITH THE VIRGINIA DEPARTMENTS OF MENTAL HEALTH AND MENTAL RETARDATION AND REHABILITATIVE SERVICES (Revised 9/87).

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CONSUMER-SPECIFIC INTERVENTION TIME
RECORDING SHEET (Revised 9/86a)

Consumer:
Name:_____

Staff Member:
Name:_____

SSN:__ __ __/__ __/__ __ __ __

ID Code:_____

Recording Period:__ __/__ __
mo yr

Case Managers: DRS:_____

MHMR:_____

Date (Month/Day)	/ /	/ /	/ /	/ /	/ /	/ /	/ /
INTERVENTION TIME DIRECTLY RELATED TO JOB SKILLS TRAINING (Hours:Minutes)							
1. ACTIVE (consumer and job coordinator at job site)							
2. INACTIVE (between periods of active intervention)							
INTERVENTION TIME INDIRECTLY RELATED TO JOB SKILLS TRAINING (Hours:Minutes)							
1. TRAVEL/TRANSPORTING							
2. CONSUMER TRAINING							
3. PROGRAM DEVELOPMENT (task analysis & behavioral intervention programs)							
4. DIRECT EMPLOYMENT ADVOCACY (work site related, includes consumer specific job development)							
5. INDIRECT EMPLOYMENT ADVOCACY (non-work site related)							
6. SCREENING AND EVALUATION (screening consumer for service eligibility)							
TOTAL (daily)							

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GENERAL DEFINITIONS

Enter the name and social security number (SSN), or affix preprinted label, of the consumer in the spaces provided. Also enter the name and I. D. number of the employment specialist who actually provided the intervention time recorded on this sheet.

INTERVENTION TIME DIRECTLY RELATED TO JOB SKILLS TRAINING

1. TIME ACTIVE: Time at job site actually spent working with consumer, including active observation. Includes ANYTHING DONE TO ACTIVELY TRAIN THE CONSUMER.

2. TIME INACTIVE: Time spent on the job site between periods of active intervention. This is time during which YOU HAVE REMOVED YOURSELF FROM ACTIVE INVOLVEMENT WITH AND/OR ACTIVE OBSERVATION OF THE CONSUMER.

INTERVENTION TIME INDIRECTLY RELATED TO JOB SKILLS TRAINING

1. TRAVEL/TRANSPORT TIME: Time used either in traveling to a job site, to a meeting about a consumer, to the consumer's home, or in transporting a consumer anywhere.

2. CONSUMER TRAINING TIME: Time spent TRAINING the CONSUMER in OTHER THAN DIRECTLY RELATED JOB SKILLS while he/she is NOT AT WORK. Examples are: money handling, grooming, counseling, bus training, family matters, etc.

3. CONSUMER PROGRAM DEVELOPMENT: This is time spent developing appropriate instructional plans (WRITING TASK ANALYSES AND BEHAVIORAL INTERVENTION PROGRAMS). Consumer-specific job development is NOT included here.

4. DIRECT EMPLOYMENT ADVOCACY TIME: Time spent ADVOCATING for the consumer WITH JOB SITE PERSONNEL FOR PURPOSES DIRECTLY RELATED TO EMPLOYMENT. These persons would include EMPLOYERS, SUPERVISORS, CO-WORKERS, AND CUSTOMERS. Consumer-specific job development is also included here.

5. INDIRECT EMPLOYMENT ADVOCACY TIME: Time spent ADVOCATING WITH PERSONS NOT DIRECTLY AFFILIATED WITH THE EMPLOYMENT SITE. These persons would include BUS DRIVERS, SCHOOL PERSONNEL, LANDLORDS, CASE MANAGERS, BANK PERSONNEL, PARENTS, etc.

6. CONSUMER SCREENING/EVALUATION: Time spent SCREENING CONSUMER REFERRALS to determine eligibility for services or evaluating eligible consumers. Any time spent analyzing any information relevant to a consumer's employment potential is included here. The following, when done for purposes of screening or evaluation would be included here: REVIEWING CONSUMER RECORDS; CONSUMER INTERVIEW; COMMUNICATION WITH PARENTS or GUARDIANS OR INVOLVED AGENCIES; OBSERVATION OF CONSUMER IN REAL OR SIMULATED WORK SETTINGS.

NOTE: If intervention indirectly related to job skills training (for example, calling the employer of another consumer, or program development) is performed while inactive on the job site, do not record the time in both places, even if it was for two different consumers. Record the time as indirectly related to job skills training (in the appropriate category), rather than inactive time directly related to job skills training, even though you are at the job site.

Appendix B.

Table A. Structural coefficients for proportional time short term employment model, metric form

Predetermined Variables	Dependent Variables 7	8	9	10	11	12
1. FUNCTION	7.014*	0.074	-0.020	-0.099*	-0.019*	0.017
2. EDUCATION	3.252	0.030	-0.006	-0.043	0.004	-0.034
3. EMPLOYMENT	0.052	-0.001	-0.001	-0.002*	0.000	0.001
4. FAMILY SUPPORT	0.772	0.114	0.062	0.014	0.001	0.024
5. BENEFITS	0.297	-0.030	0.003	0.038	0.001	0.065*
6. TRANSPORTATION	6.639	0.048	-0.077	-0.019	-0.013	0.181
7. JOB MATCH		-0.001	-0.001	-0.002	0.000	-0.001
8. SOCIAL LEVEL				-0.008	-0.003	-0.001
9. EMPLOYER SUPPORT				0.002	-0.006	-0.040
10. TRAINING (%)						-0.126*
11. ADVOCACY (%)						-1.361*
12. WORK8						
Coefficient of Determination	0.093	0.022	0.021	0.127	0.068	0.191

* Coefficient at least twice its standard error.

Table B. Structural coefficients for total time short term employment model, metric form.

Predetermined Variables	Dependent Variables 7	8	9	10	11	12
1. FUNCTION	7.014*	0.074	-0.020	-11.650*	-0.746	0.071*
2. EDUCATION	3.252	0.030	-0.006	-0.912	-0.163	-0.034
3. EMPLOYMENT	0.052	-0.001	-0.001	-0.130	0.007	0.001
4. FAMILY SUPPORT	0.772	0.114	0.062	1.470	-0.057	0.019
5. BENEFITS	0.297	-0.030	0.003	10.242*	0.522	0.045*
6. TRANSPORTATION	6.639	0.048	-0.077	-0.162	-1.397	0.196
7. JOB MATCH		-0.001	-0.001	-0.304*	-0.001	0.000
8. SOCIAL LEVEL				-0.282	0.085	0.005
9. EMPLOYER SUPPORT				-10.446	-0.008	-0.017
10. TRAINING						0.002*
11. ADVOCACY						-0.003
12. WORK8						
Coefficient of Determination	0.093	0.022	0.021	0.143	0.036	0.159

Table C. Structural coefficients for proportional time long term employment model, metric form.

Predetermined Variables	Dependent Variables 7	8	9	10	11	12	13	14
1. FUNCTION	7.364*	0.055	-0.031	-0.102*	-0.007*	0.000	-0.013	-0.001
2. EDUCATION	2.968	0.061	0.019	0.010	-0.001	0.000	-0.016	-0.110
3. EMPLOYMENT	0.041	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.001
4. FAMILY SUPPORT	0.944	0.111	0.073	0.009	0.000	0.000	0.002	0.006
5. BENEFITS	0.523	-0.020	0.004	0.043*	0.002	0.000	0.000	-0.016
6. TRANSPORTATION	5.413	0.044	-0.021	-0.095*	-0.013*	0.000	0.011	0.003
7. JOB MATCH		-0.001	-0.001	-0.002*	0.000	0.000	0.000	0.000
8. SOCIAL LEVEL				-0.013	0.002	0.000	-0.022*	-0.007
9. EMPLOYER SUPPORT				-0.022	0.002	0.000	0.006	0.129*
10. TRAINING (%)						0.000	0.149*	-0.135
11. ADVOCACY (%)						0.004	0.748*	0.303
12. EVALUATION (%)							2.540	-10.362
13. FOLLOW-ALONG (%)								0.343
14. WORK6								
Coefficient of Determination	0.087	0.018	0.024	0.255	0.068	0.032	0.357	0.055

* Coefficient is at least twice its standard error.

Note:
Number in parentheses is the standard error.

Table D. Structural coefficients for total time long term employment model, metric form.

Predetermined Variables	Dependent Variables 7	8	9	10	11	12	13	14
1. FUNCTION	7.364*	0.055	-0.031	-15.355*	-0.433	0.052	-9.492*	0.007
2. EDUCATION	2.968	0.061	0.019	3.137	-0.550	-0.200	-5.223	-0.098
3. EMPLOYMENT	0.041	-0.001	-0.001	-0.169	0.007	0.000	0.054	0.001
4. FAMILY SUPPORT	0.944	0.111	0.073	0.223	-0.128	0.058	-0.672	0.006
5. BENEFITS	0.523	-0.020	0.004	6.727*	0.426	-0.019	3.129	-0.021
6. TRANSPORTATION	5.413	0.044	-0.021	-8.597	-1.234	-0.002	1.309	0.003
7. JOB MATCH		-0.001	-0.001	-0.315*	-0.003	0.002	-0.123	0.000
8. SOCIAL LEVEL				0.690	0.595	0.258	-10.808*	0.003
9. EMPLOYER SUPPORT				-15.612	-0.377	-0.103	3.752	0.119
10. TRAINING						0.000	0.260*	-0.001*
11. ADVOCACY						0.026	1.258*	-0.002
12. EVALUATION							2.593	0.010
13. FOLLOW-ALONG								0.002*
14. WORK6								
Coefficient of Determination	0.087	0.018	0.024	0.157	0.031	0.035	0.257	0.096

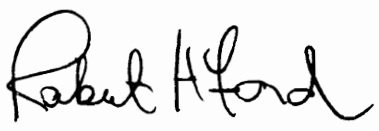
* Coefficient is at least twice its standard error.

Vita

Robert H. Ford

I was born Easter Sunday, 1953. My mother wanted a girl, but got me. Her first reaction upon seeing me was to cry. After an uneventful childhood in Virginia Beach, Virginia, I quit my paper route in 1971 to matriculate at Virginia Tech. Four years, and several majors later, I graduated with a degree in Home Economics. I journeyed to Texas where I attended a mainstream church seminary. Realizing I was where I should not be, I returned to Virginia and conducted in-school programs for the 4-H program. My lasting claim to fame was the plaque I left on the office wall when I quit to matriculate in a master's program in forestry at Virginia Tech. I worked on the endangered Round-leaf birch, and watched the population drop from 40 to less than 15 individuals. After a threatened picture book thesis, I journeyed to America's third world--Appalachia--where I tormented general biology students at a community college for six years. The thirst for knowledge was unquenchable, so I returned to the source once more for refreshment. I met the challenge of "Sadistics" and research design to complete my Ph.D. I soon leave for the beans and corn of Muncie where I will train the next generation Indianan teachers.

I occasionally entertain the masses with tales from the backwoods. My son survives me, as do my parents.



Robert H. Ford