

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

EXAMINING A PROPOSED JOB RETENTION MODEL FOR ADULT WORKERS
WITH MENTAL RETARDATION IN SUPPORTED EMPLOYMENT

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Sandra Lee Fornes

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DEDICATION

In Memory of Christopher Douglas Fornes. Christopher was a very special and courageous individual who taught us all the true meaning of life and love. “There are no guarantees in life, except that everyone faces struggles. This is how we learn (and grow). Some face struggles from the moment they are born. They are the most special of all people, requiring the most care and compassion and reminding us that love is the sole purpose of life.” Elisabeth Kubler-Ross.

This is why we always thought of Christopher as a Hidden Angel.

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ABSTRACT OF THE DISSERTATION
EXAMINING A PROPOSED JOB RETENTION MODEL FOR ADULT WORKERS WITH
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by

Sandra Lee Fornes

Florida International University, 2007

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Professor Tonette Rocco, Major Professor

This quantitative study investigated the predictive relationships and interaction between factors such as work-related social behaviors (WRSB), self-determination (SD), person-job congruency (PJC), job performance (JP), job satisfaction (JS), and job retention (JR). A convenience sample of 100 working adults with MR were selected from supported employment agencies. Data were collected using a survey test battery of standardized instruments. The hypotheses were analyzed using three multiple regression analyses to identify significant relationships. Beta weights and hierarchical regression analysis determined the percentage of the predictor variables contribution to the total variance of the criterion variables, JR, JP, and JS.

The findings highlight the importance of self-determination skills in predicting job retention, satisfaction, and performance for employees with MR. Consistent with the literature and hypothesized model, there was a predictive relationship between SD, JS and JR. Furthermore, SD and PJC were predictors of JP. SD and JR were predictors of JS. Interestingly, the results indicated no significant relationship between JR and JP, or between JP and JS, or between PJC and JS. This suggests that there is a limited fit between the hypothesized model and the study's findings. However, the theoretical contribution made by this study is that self-

determination is a particularly relevant predictor of important work outcomes including JR, JP, and JS. This finding is consistent with Deci's (1992) Self-Determination Theory and Wehmeyer's (1996) argument that SD skills in individuals with disabilities have important consequences for the success in transitioning from school to adult and work life. This study provides job retention strategies that offer rehabilitation and HR professionals a useful structure for understanding and implementing job retention interventions for people with MR.

The study concluded that workers with mental retardation who had more self-determination skills were employed longer, more satisfied, and better performers on the job. Also, individuals whose jobs were matched to their interests and abilities (person-job congruency) were better at self-determination skills.

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LIST OF ACRONYMS

JP	Job Performance
JR	Job Retention
JS	Job Satisfaction
MR	Mental Retardation
PJC	Person Job Congruency
SD	Self-determination
WRSB	Work-related Social Behavior

CHAPTER I

INTRODUCTION

Job retention, job performance, and job satisfaction are critical components in the effort to assist individuals with mental retardation (MR) to maintain long-term employment and move from dependency to self-sufficiency (Roessler, 2002; Rusch, 1986). Job retention is a challenging aspect of workforce development and one with no agreed-upon standard for effectiveness (Roessler, 2002). This quantitative study addressed job retention of individuals with MR, using multiple regression analysis. The study investigated the relationship between work-related social behaviors, self-determination, person-job congruency of individuals with MR, and their job performance, job satisfaction, and job retention. This chapter begins with the background to the study, problem statement, purpose, and hypotheses, followed by the theoretical framework, definition of terms, significance of the study, assumptions and limitations, and summary of the study.

Background to the Problem

Nearly one in five Americans has a disability, constituting the nation's largest minority. Among the 54 million adults with disabilities in the United States, 33 million have a severe disability and 10 million need assistance in their daily living (U.S. Department of Census, 2000). Eighty percent of adults with disabilities report that they want to work; yet, more than 75% remain unemployed (Harris & Associates Survey, 2000; U.S. Department of Census, 2000). Only 35% of people with disabilities are employed compared to 78% of those who do not have disabilities (Harris & Associates Survey, 2004).

Over 7 million people in the United States have MR and 1 out of 10 families are directly affected (U.S. Department of Census, 2000). A hierarchical order of social and work acceptance

of individuals with disabilities exists based on the type and severity of their impairment(s) (Strohmer, Grand, & Purcell, 1998). Mental illness and MR are at the bottom of social and work acceptance (Strohmer et al., 1998). Mental retardation has consistently been identified as the least accepted disability (Harris & Associates Survey, 1986, 1994, 1998, 2000), resulting in greater social distance and less opportunity for social integration (Karnilowicz, Sparrow, & Shinkfield, 1994; Lyons & Hayes, 1993) and long-term employment (Konig & Schalock, 1991).

Work provides structure and order and conveys status and purpose to people's existence (Salkever, 2000). Work is centrally related to quality of life (Roessler & Rubin, 1998; Salkever, 2000). Yet, for many people with MR, this avenue for a better life has been restricted due to poor job retention. Job retention, the ability to remain employed for an extended period of time once a person has learned a job (Trach, Rusch, & DeStefano, 1987), ensures the economic benefits of work. These economic benefits include financial independence and lessening the need for support from government and others (Anthony, 1994; Rosenberg, Cheyney, & Greenberg, 1991). Successful job retention helps people with MR to establish social relationships and develop self-confidence and self-determination (Roessler & Rubin, 1998; Storey, 2002; Storey, Rhodes, Sandow, Loewinger, & Petherbridge, 1991). With meaningful work, individuals with MR become respected, constructive members of society involved in the mainstream labor force, fulfilling individual and societal expectations (Ormel, Lindenberg, Steverink, & Verbrugge, 1999; Super, 1990) and reducing societal prejudice (Phelan, Linke, Stueve, & Pescosolido, 2000). Although job retention is important for individuals with MR, only 7 to 23% of adults with MR are employed full-time (Pimentel, 2001; Temple University Developmental Disabilities Center/UAP, 2000).

Job retention outcomes for people with MR indicate that 25% of those successfully placed in jobs are no longer employed three months later and approximately 50% are not employed 12 months after job placement (Gibbs, 1990; Harris & Associates Survey, 2000). Job retention is affected by three sets of external factors: (a) a social context -- social and cultural environments (Wehman, 2001); (b) a work context -- work characteristics and work intervention procedures (Rosenberg & Brady, 2000; Wehman, 2001); (c) a vocational context -- training and transition (Wehman, 2006); and internal factors such as worker's attitudes and behaviors (Rosenberg & Brady, 2000). The social context includes economic situations, labor market conditions, legislation, societal attitudes and climate (Wehman, 2001), physical and family settings, transportation, and housing (Rusch, 1990). The work context includes employer ignorance and bias (Rusch, 1990), lack of opportunities, downsizing and restructuring, poor placement, inadequate job-match and career development, deficiencies in restructuring jobs, and training programs to accommodate individuals with MR (Lagomarcino, Hughes, & Rusch, 1989). Poor job retention is also attributed to vocational context and the failure of vocational rehabilitation practices to provide integrated paid employment, such as vocational training programs and transitional employment programs (Wehman, 1986; Wehmeyer, Agran, & Hughes, 1998, 2000). Even supported employment (SE), which has been identified as the most promising approach to integrated paid work environments (Bond, Dietzen, McGrew, & Miller, 1995; Rusch, 1990), has not provided for long-term job retention (Ellis, Rusch, Tu, & McCaughrin, 1990; Konig & Schalock, 1991). Finally, the major factors contributing to poor job retention is an individual's context and other internal factors, including a combination of individual work-related social behaviors, job performance (Rosenberg & Brady, 2000), and job dissatisfaction (Hill, Wehman, Hill, & Goodall, 1986; Mueser, Becker, & Wolfe, 2001).

Problem Statement

The Americans with Disabilities Act of 1990 (ADA) was signed into law more than a decade ago, yet the unemployment rate for people with significant disabilities and MR has remained virtually unchanged (U.S. Department of Census, 2000). Public policy makers recognized this persistent problem of unemployment among people with significant disabilities and responded by strengthening the employment outcome focus of the Rehabilitation Act of 1973. This initiated a new program such as the Ticket to Work and Work Incentives Improvement Act of 1999 (TWWIIA, Pub. L. 106-170) providing working disabled individuals with continued Medicare entitlement even when gainfully employed. These initiatives alone cannot solve the employment challenges of many people with MR. Rehabilitation providers and human resources (HR) professionals need to increase the effectiveness of placement and job retentions services (Gilbride, Stensrud, Vandergoot, & Golden, 2003). This requires a better understanding of the relationship between personal and work characteristics of working adults with MR and their ability to remain employed. The problem to be examined is whether a group of worker characteristics are related to employment retention in individuals with MR, leading to the development of a job retention model that can offer rehabilitation and HR professionals a useful structure for understanding and implementing job retention interventions. The need for objective evaluations and application of alternative strategies, in response to changing work environments, is critical (Brady & Rosenberg, 2002).

The purpose of this study was to test hypothesized job retention (JR) model for adult workers with MR by examining the predictive relationships between such factors as work-related social behaviors (WRSB), self-determination (SD), person-job congruency (PJC), job performance (JP), job satisfaction (JS), and job retention (JR).

Research Questions and Hypotheses

The overarching questions were: (a) Are work-related social behaviors, self-determination skills, person-job congruency, job performance, and job satisfaction related to job retention in workers with MR? (b) Are job satisfaction, job retention, work-related social behaviors, self-determination, and person-job congruency related to job performance in workers with MR? (c) Are these same variables related to job satisfaction in workers with MR? To explore these questions three research hypotheses were tested:

H1. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JS would account for a significant amount of variance in the dependent variable, JR.

H2. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JS, and JR would account for a significant amount of variance of the dependent variable, JP.

H3. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JR would account for a significant amount of variance in the dependent variable, JS.

Theoretical Framework

Appropriate work-related social behaviors are the most important factors rated by employers (Graffam, Shinkfield, Smith, & Polzin, 2002). Individuals' abilities to work at a satisfactory standard and to undertake all the assigned tasks also ranked highly among employers (Graffam et al., 2002). For workers with MR, the combination of work behavior, job dissatisfaction, and performance accounts for 75% of job separation (Mueser et al., 2001; Roessler, 2002; Rosenberg & Brady, 2000). Additionally, successful job retention, job performance, and job satisfaction for workers with MR are directly related to work-related social behaviors (Rosenberg & Brady, 2000) and person-job congruency, or match between the person's interest and abilities and the job environment (Roessler, 2002; Wehman & Kregel,

1998). Self-determination, the ability to exert control over one's life, regulate behavior, and have a realistic understanding of one's abilities and limitations, also influences job retention, performance, and satisfaction (Wehmeyer et al., 1998).

A job retention model was formed based on assumptions from the literature. While other JR models exist, the researcher chose to use a model developed from the literature that focused on internal factors of workers' individual characteristics rather than external factors such as economic issues, levels of support and vocational transition. External factors were purposely excluded from the study in order to better identify factors that are related and contribute to work outcomes (i.e., JR, JP, JS) of workers with MR and are within the control of the individual.

The hypothesized model of job retention (see Figure 1) suggests that if adult workers with MR maintain appropriate work-related social behaviors (Rosenberg & Brady, 2000); are allowed to make their own decisions (self-determination; Wehmeyer & Palmer, 2003); and work at jobs that are congruent with their interests and abilities (person-job congruency; Holland, 1985a); it is predicted that they will have high job satisfaction, good job performance, and long-term employment (job retention). Furthermore high job satisfaction in individuals with MR will predict job performance and job retention (Mueser et al., 2001). High job performance is related to job satisfaction and job retention. Job retention will continue to predict high levels of job satisfaction and job performance, sustaining a circular performance improvement/job retention model.

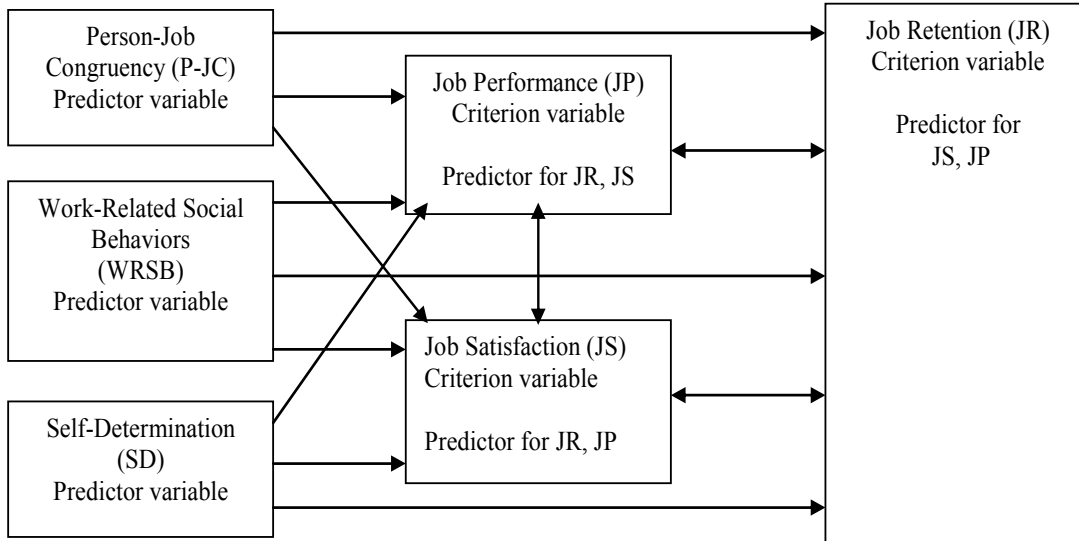


Figure 1. A hypothesized model of job retention for workers with MR.

The framework for this study was derived from theories and concepts relevant to long-term employment of individuals with MR. A literature review provided insights into the reasons low JR might exist and identified work variables related to JR of individuals with MR. These variables include work-related social behaviors, person-job congruency, self-determination, job satisfaction and job performance. *Person-job Congruency*

Successful person-job congruency is employed to help people with MR identify and acquire positions in which their needs, interests, and skills correspond to job activities and job requirements. Understanding persons' abilities and strengths and their fit with desired career paths are the first steps toward designing a vision of fulfilling and retaining employment (Holland, 1985b; Wehman & Kregel, 1998).

Self-determination

SD is the "capacity to choose and to have the choices, rather than reinforcement contingencies, drives, or any other forces or pressures, to be the determinants of one's actions" (Deci, 1992, p. 38). Self-determined behavior is also defined as "a primary causal agent in one's

life and making choices regarding one's quality of life free from undue external influences or interferences" (Wehmeyer, 1992, p. 305). Self-determination emerges from learning across the lifespan and empowers individuals to plan and make choices about their careers, work, and life moving these individuals to community-based work and independent living environments. SD refers to actions that are identified by four essential characteristics: (a) the person acts autonomously, (b) his/her behaviors are self-regulated, (c) the person imitates a response to the event in a psychologically empowered manner, and (d) the person acts in a self-realizing manner (Wehmeyer, 1992, 2001). Higher self-determination and increased capacity of the four essential characteristic result in better work outcomes for individuals with MR (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Wehmeyer & Palmer, 2003). When individuals with MR capitalize on their self-determination, they are more likely to find competitive employment opportunities and achieve job satisfaction, job performance, and job retention (Wehmeyer, 1999, 2001; Wehmeyer & Palmer, 2003). Self-determination is crucial for one's long-term employment, job satisfaction, and performance. Self-determination leads people to define goals and to make choices and decisions free from undue external influences and interferences (Wehmeyer et al., 1998). Individuals have sharper perceptions of themselves and increased self-acceptance and abilities to identify their major economic, career, job, and personal needs (Shaw, 1976).

Work-related Social Behaviors

Work-related social behaviors fall under three categories: social awareness, temperament, and personality characteristics. Social awareness involves getting along and interacting with supervisors and co-workers and understanding the work environment (Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986; Lagomarcino et al., 1989; Martin, Mithaug, & Burger, 1990). Temperament includes adaptive, subordinate behaviors and the ability to deal with the

pressures and stress of the job (Salzberg, Agran, & Lignugirs-Kraft, 1986). Personality characteristics include appearance, cooperativeness, ability to accept constructive criticism, and honesty (Martin et al., 1990; Rosenberg & Brady, 2000). A lack of these work-related social behaviors causes unsuccessful job retention twice as often as performance factors (Chadsey-Rusch, 1992; Cheney & Foss, 1984; Rosenberg & Brady, 2000).

Job Performance

Job performance factors include two categories: job responsibility and job/task production. Job responsibility includes behavior that suggests job commitment (Hackman & Oldham, 1974, 1976). A lack of job responsibility is characterized by absences, tardiness, lack of initiative or work motivation, and poor work attitude (Salzberg et al., 1986). Task production requires physical stamina necessary to complete work tasks. Lack of stamina affects the quantity and quality of production. Both work-related social behaviors and performance impact an individual's job satisfaction and job retention.

Job Satisfaction

Job satisfaction, an employee's feelings and attitudes about the job, influences the way the job is done (Herzberg, 1968). Positive job satisfaction improves both job performance and job retention in the population with MR (Roessler, 2002). Job satisfaction is also improved by the degree of person-job congruency (Lofquist & Dawis, 1975; Roessler, 2002). Job satisfaction in employees with MR improves their self-determination - a principle component in the individual's occupational choice.

The proposed job retention model for adult workers with MR (see Figure 1) illustrates that a positive relationship exists between work-related social behaviors, person-job congruency, and self-determination and job satisfaction, job performance and job retention. Furthermore,

there is a positive relationship between job retention, job satisfaction, and performance as well as sustained appropriate work-related social behaviors and improved self-determination decisions creating a circle of continuous employment (job retention).

Significance of the Study

The employment status of individuals with disabilities and the various models of employment services are of great interest to a wide audience, including social service professionals, social welfare administrators, HR professionals, economists, and politicians as well as individuals with disabilities and their family members (Conyers, 2000). Many people with MR are ready, willing, and able to work (Kennedy & Olney, 2001), and they are the largest source of unutilized talent in our labor force (Green & Brooke, 2001). HR managers' goal to increase organizational competition demands maximizing performance and satisfaction of entry-level employees (Kouzes & Posner, 1988). This requires an understanding of the work-related social variables that affect job satisfaction, job performance, and job retention for workers with MR (Unger, Wehman, Yasuda, Campbell, & Green, 2002). The proposed job retention model identified the predictable on-the-job challenges that a person must meet and improve over time in order to maintain work and to advance. Improving job retention for individuals with MR will improve their life quality and lessen government and family support. The centrality of work is reflected in its ability to provide economic support leading to greater opportunity and independence (Conyers, 2000). Achieving greater independence for individuals with MR depends upon the acquisition of several key skills (Davies, Stock, & Wehmeyer, 2002).

The proposed job retention model offers rehabilitation and HR professionals a useful structure for understanding and implementing job retention and productivity interventions for people with MR. The results of this study and validation of the job retention model can provide

groundwork for further research in the development of a diagnostic assessment battery. This diagnostic instrument can be used to assess the job performance and satisfaction of adult workers with MR through job-person congruency, self determination skills, and work-related social behaviors. Such a diagnostic battery of tests can provide HRD and vocational rehabilitation professionals a means to identify and assess the strengths and limitations of workers with MR in order to tailor training and professional and career development practices for individuals with MR.

Definitions of Terms

Attitudes are the established ways of responding to people and situations in the environment and are manifested through learned behavior based on one's beliefs, values, and assumptions (Brief & Robertson, 1987).

Competitive employment covers work for remuneration in business, industry, government, or other sectors that exercise selective hiring practices based upon the qualifications of available applicants and provide compensation consistent with wages paid to non-disabled workers with similar job functions (DiLeo & Langton, 1993).

Developmental disability refers to a diverse group of severe chronic conditions that are due to mental and/or physical impairments. A developmental disability is an impairment that affects the process of normal development and results in a long-term need for significant assistance in such life activities as mobility, communication, and self-care. Developmental disabilities begin anytime during development up to 22 years of age and last throughout a person's lifetime (U.S. Department of Health and Human Services, 2004).

Disability is a long-term physiological, anatomical, mental, or emotional impairment that substantially limits one or more major life activities (Jarrow, 2005).

Integrated work environment is achieved when persons with disabilities are afforded an equal opportunity to participate in the workplace (Rusch, 1990) and to interact with non-disabled co-workers and customers (DiLeo & Langton, 1993).

Job coaches manage the public relations, job development, job analysis, client assessment, job accommodations (adapting the job to the client's abilities), training, assistance, and support for long-term employment. The job coach also manages employer relations with the organization's managers, case management, counseling, and supervisors (Wehman, 2001).

Job retention as measured by the number of months an individual is competitively employed in the open labor market, refers to procedures for assisting individuals in retaining employment once they have learned the job. Job retention can be determined by reassessing worker performance during and after training and socially validated in the quality of job performance and efforts to meet client, employer, and parent or care-giver expectations (Trach et al., 1987).

Job satisfaction is employees' feelings and attitudes about the job (Herzberg, 1968). As measured by the *Job-in-General*, job satisfaction is the extent to which individuals are satisfied with their jobs or how they feel about different aspects of their jobs (Cranny, Smith, & Stone, 1992).

Mental retardation is a cognitive or intellectual disability which is characterized by a significant limitation in both mental ability or intelligence and adaptive behaviors. This major group of disorders of infancy, childhood, or adolescence are characterized by intellectual functioning that is significantly below average (IQ of 70 or below) and manifested before the age of 18 by impaired adaptive functioning in such areas as social or daily living skills, communication, and self-sufficiency (American Association of Mental Retardation, 2002).

Learning limitations range from profound, total dependency and the need for complete supervision, to mild, minimal dependency and supervision (American Association of Mental Retardation, 2002).

Natural support is any assistance from supervisors and co-workers that allow people to secure, maintain, and advance in a job of their choosing. This support corresponds to the typical work routines and social actions of other employees and enhances social relationships (Rogan, Hangner, & Murphy, 1993).

Ongoing and continual support services include activities, such as supervision, training, and transportation that persons with disabilities need to sustain paid work (Federal Register, 1984).

Performance is engagement in income-producing work measured through improvements in job tasks, job responsibilities, income level, employment status, job advancement, or other contributions to a household or community (Wehman, 1981). *Person-job congruency* is a match between the person's interest and abilities, the job environment and the demands of a job (Holland, 1997; Roessler, 2002). Person-job congruency can further be defined as the desires of a person and the attributes of a job (Edwards, 1991).

Rehabilitation is a method through which individuals with disabilities are enabled to mobilize their own resources, to work out their own problems, and to make personal decisions (Wright, 1983).

Sheltered workshop refers to work environments where only persons with disabilities are employed and where payment is customarily less than the minimum wage (Konig & Schalock, 1991).

Self-determination is the ability to exert control over one's life, regulate behavior, and have a realistic understanding of one's abilities and limitations (Wehmeyer et al., 1998). Self-Determination Theory focuses on the degree to which human behaviors are volitional or self-determined or the degree to which people endorse their actions at the highest level of reflection by engaging in the actions with a full sense of choice (Ryan & Deci, 2000).

Social integration refers to individuals' full participation in social interactions, social networks, and relationships ranging from casual to intimate (Wright, 1983). Employees with and without disabilities are incorporated into and share equal membership in the same social network (Chadsey-Rusch, 1986).

Supported employment is competitive work in an integrated work setting for individuals who, because of their disability, need ongoing support services to perform the work required. Supported employment provides payment at or above the minimum wage (P.L. 99-506, Rehabilitation Act Amendment of 1986).

Transition refers to a change in one's status from living primarily as a student to assuming adult roles in the community, such as working, participating in post-secondary education, and maintaining a home (Halpern, 1994).

Transitional service is a coordinated set of activities that assists young adults with disabilities to move from school to post school activities, including postsecondary education, vocational training, integrated employment (including SE), continuing and adult education, independent living, community experiences, and the development of employment and other post school adult living objectives (DiLeo & Langton, 1993; U.S. Department of Education, 1997).

Work is a goal-directed activity for social, economic, or other desired outcomes. Work is a means by which individuals define themselves as a part of society and access self-fulfillment and creative expression (Scotch, 1988).

A worker is a person engaged in economically productive activities for most of the year or the working season in manual or non-manual work (Unger, 2002).

Work personality is the set of behavior patterns exhibited in a work situation or the manner in which an individual enacts a work role (Costa & McCrae, 1992).

Work tolerance is the ability to sustain a work effort for a prolonged period of time, to maintain a steady flow of production at an acceptable pace and level of quality, and to handle work pressures in a satisfactory manner (Wright, 1980).

Assumptions and Delimitations of the Study

There were several assumptions and delimitations to this study.

Assumptions

The study's assumptions included: (a) Work-related social behaviors had the same value for disabled and non-disabled workers. (b) Participants understood and completed the instruments correctly, honestly, and individually. (c) Participants' statements and responses to questionnaires about their jobs, needs, and levels of satisfaction and commitment were influenced by social cues, affect, and personality differences.

Delimitations

The first delimitation of the study includes the generalizability of the sample that could be a potential limitation of the study. The data for the study comprised a non-random sample (i.e., a convenience sample). Second, the self-report nature of the instruments used in this study may have created the potential for common method variance to bias the results. The research

design employed two different measurement periods in an effort to control for common method bias. This time lag helped to control for several potential sources of common method bias, such as consistency motif, transient mood state, context effects, and demand characteristics (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). There was some evidence that these efforts may have been successful. For example, several of the observed relationships were non-significant, suggesting that an overall response bias did not account for the findings.

Summary

The study addressed low job retention of individuals with MR and its relationship to work-related social behaviors, self-determination skills, job-person congruency, job satisfaction, and job performance. A validation of the proposed job retention model could lead to the development of a diagnostic tool to assess performance, job satisfaction, job fit, self-determination skills, and work-related social behaviors of individuals with MR.

Chapter 2 provides a review of the literature. Discussed in chapter 3 is the research method (research design, setting, ethical considerations, sampling, and data collection and analysis procedures), including the use of multivariate correlation statistics. Chapter 4 presents the findings of the study, and chapter 5 concludes with a summary, implications, and recommendations.

CHAPTER II

LITERATURE REVIEW

This chapter reintroduces the research questions and proceeds with a review of the literature to help define these questions. The chapter continues with an overview of changes in societal perceptions and legislative and vocational rehabilitation approaches to disability. A discussion of the benefits for organizations hiring workers with mental retardation and the influences of HR development employment practices follow. Vocational rehabilitation approaches as they relate to employment strategies for individuals with MR are discussed followed by a presentation of external and internal factors influencing job retention. Finally, the effects of job performance and job satisfaction on job retention for individuals with MR and the proposed model to improve job retention for individuals with MR are discussed.

Research Questions

The overarching questions were: (a) Are work-related social behaviors, self-determination skills, person-job congruency, job performance, and job satisfaction related to job retention in workers with MR? (b) Are job satisfaction, job retention, work-related social behaviors, self-determination, and person-job congruency related to job performance in workers with MR? (c) Are these same variables related to job satisfaction in workers with MR? The following review of the literature was conducted to help define these questions.

Workplace Integration and Inclusion: Historical and Contemporary Perspectives

Over the past 40 years, the movement from sheltered workshop environments to competitive employment in the open labor market has improved the integration of employees with MR into real world work environments. However, societal and corporate unequal treatment of people with MR works directly in opposition to the attainment of long-term competitive

employment for people with MR (Wehman & Kregel, 1998) making them the highest unemployed minority group (Pimentel, 2001). The evolution of treatment and integration of people with disabilities into the workplace is reflected through changes in societal perspectives on disability, legislative initiatives, and vocational rehabilitation approaches to employment strategies (Unger et al., 2002).

Societal Perspectives on Disability

Prior to 1970, disability and rehabilitation delivery services were defined mostly from the medical and economic perspectives (Engel, 1977). The medical perspective was based on clinical examinations and medical remedies of a person's handicap and aimed to restore abilities or "fix" supposed bodily defects and/or deficiencies (Tate & Pledger, 2003). To be recognized as a disability, a medical condition was identified and given a diagnosis, defining disability as a condition of impairment (Hahn, 1999). This medical perspective constructed images of people with disabilities as deviants, menaces, angelic innocents, and poor unfortunates (Mason, Williams-Murphy, & Brennan, 1996). The medical perspective has often been joined with an economic perspective. The economic perspective defined disability as an inability to work (Hahn, 1985, 1999) and aimed at enhancing individuals' occupational capacities and talents to overcome their vocational limitations (Verbrugge & Jette, 1994). Both perspectives focused on persons' disability rather than on their ability and stereotyped individuals with disabilities as second-class citizens unable to make competent decisions or perform job duties (Boyle, 1997). Often individuals with MR were seen as "owning" the problem rather than having limitations caused by environmental restrictions such as discrimination (Kaplan, 2000).

In the 1970s, the traditional medical and economic perspectives were challenged by the sociopolitical perspective on disability (Cook, 1987). People with disabilities made the case that

their problems stemmed from the architectural and attitudinal environment rather than from their physical or psychological impairments (Bogdan & Taylor, 1982). During this period, services for individuals with disabilities underwent considerable changes (Pagliano, 2001), including the process of: (a) deinstitutionalization, or moving individuals with disabilities out of institutions into society (Taylor, Biklen, & Knoll, 1987); (b) mainstreaming, or placing children with disabilities into regular schools with non-disabled peers; and (c) normalization, or making the life and environment of individuals with disabilities equal to those without disabilities (Wolfensberger, 1972).

Legislative Initiatives

Legislative initiatives have contributed to the change in societal perceptions of people with disabilities and their rehabilitation, placement, and employment. As early as 1918, Congress established vocational rehabilitation agencies to assist with the rehabilitation of World War I Veterans (DiLeo & Langton, 1993). In the 1950s, parent groups such as the Association of Retarded Citizens (ARC) demanded more educational and vocational services which led to sheltered workshops (DiLeo & Langton, 1993). More recent legislation includes the Rehabilitation Act of 1973 and its subsequent reauthorizations –PL 99-506 (1986), the Americans with Disabilities Act of 1990 (ADA), and specifically for people with MR, the Developmental Disabilities Bill of Rights Act of 1984 – PL 98-527.

Section 504 of the Rehabilitation Act of 1973 was designed to prohibit discrimination of people with disabilities and required employers to take steps to accommodate these workers (Gliedman & Roth, 1980). The Rehabilitation Act Amendments of 1986 established minimum wage standards for people participating in supported employment (Conley, Rusch, McCaughrin, & Tines, 1989; Wehman, 1996). The Developmental Disabilities Act of 1984 also targeted

employment growth and required an integration of community job sites and competitive wages. The integration created competitive employment with support which the ADA of 1990 identified as the primary goal for employment opportunities for workers with disabilities. More recently the 99th Congress enacted major legislative changes to improve employment opportunities and outcomes for people with MR and other disabilities. The Workforce Investment Act of 1998 (P.L. 105-220) and the Ticket to Work and Work Incentives Act of 1999 (P.L. 106-170) were put in place to improve the employment of individuals with disabilities.

Despite these recent changes in legislation, people with disabilities continue to experience chronic unemployment. Two out of three persons with disabilities are not working (Harris & Associates Survey, 2000). These numbers are disheartening considering that 67% of unemployed working age people with disabilities want to work (Harris & Associates Survey, 2000). The ADA of 1990 and other federal initiatives have failed to improve the employment of individuals with disabilities as fewer of them are employed today than prior to its execution (Stapleton & Burkhauser, 2003; U.S. Department of Census, 2000).

In 2005, Senators Pat Roberts (R-KS) and Edward Kennedy (D-MA) introduced The Employer Work Incentive Act for Individuals with Severe Disabilities (Employer Work Incentive Act, 1570 IS, 109th Congress, 2005). The purpose of this Act was to promote employment opportunities and to provide both competitive salaries and good health care benefits for individuals with severe disabilities. The Act requires federal agencies to offer incentives to government contractors and subcontractors that employ individuals with severe disabilities, including individuals with mental retardation. Senators Roberts and Kennedy introduced this legislation because of their deep commitment to help Americans with severe disabilities seek and maintain employment and to facilitate the needed system-wide change. Without a system-wide

change through legislation and strong advocacy, individuals with MR are unable to overcome the barriers to full inclusion. Vocational rehabilitation approaches and inducements for organizations are a step in overcoming these barriers to workplace inclusion.

Vocational Rehabilitation Approaches to Employment Strategies

The evolution of employment of individuals with MR began in the 1970s when the federal courts began to incorporate in their rulings the normalization principle, making the work environment of individuals with disabilities equal to those without disabilities (Pennsylvania Association for Retarded Children v. Commonwealth of PA, 1972; Taylor, 1977). Since then, employment options for persons with MR have changed from segregated sheltered workshop settings to integrated supported employment settings and to the independent settings characteristic of competitive employment environments such as natural supports and community-based vocational training (Bellamy, Rhodes, Mank, & Albin, 1988; Kiernan & Stark, 1986).

Sheltered workshops. Sheltered workshops of the 60s provided jobs in a protective environment to those individuals with MR who could not obtain competitive employment. The workshops were conducted in a facility that procured sub-contract work, generally benchwork, such as sorting or assembling (Hagner & Dileo, 1993). People were paid based on their productivity (i.e., per piece), which was usually less than minimum wage (Hagner & Dileo, 1993). Sheltered workshops have been criticized for offering low pay, providing relatively simplistic and meaningless work, little opportunity for advancement, and supplying few or no employment benefits. This relegation of people with MR to their own subculture further reinforces their marginalization (Griffin, Rosenberg, Cheyney, & Greenberg, 1996).

Rehabilitation counselors began to search for alternatives to sheltered workshops (Riscala, 1974;

Wolfensberger, 1972) that would provide persons with MR opportunities for work in integrated community settings.

Enclaves and mobile work crews. The 70s brought about alternative forms of employment support: enclaves and mobile work groups. An enclave is a group of individuals who collectively complete a set of work tasks at a specific place of employment (Mank, Rhodes, & Bellamy, 1986). A mobile work crew is a group of individuals, usually up to eight, who collectively contract with businesses to perform a service (Rhodes, Sandow, Mank, Buckley, & Albin, 1991). Both enclaves and mobile work groups work under the supervision of a human service agency, which has a contract agreement with the host site and bills the business (Mank et al., 1986). Although work crews and enclaves placed employees with MR in real world environments, they continued to work separately from non-disabled employees (Mank et al., 1986).

Supported employment. Dissatisfied with the possibilities for personal fulfillment and integration in traditional developmental programs and sheltered workshops, people with MR and their advocates began to seek opportunities for paid work in integrated community settings (National Institute on Disability and Rehabilitation Research, 1994). In the mid-80s, supported employment (SE) enabled people with MR to be employed in an integrated, paid work environment with equal benefits and to obtain appropriate training, together with ongoing support to maintain employment (Bellamy et al., 1988; Konig & Schalock, 1991; Kregel & Wehman, 1997; Rusch, 1990; Wehman, 2001). However, SE has only artificially created community participation and social integration (Parent, Kregel, & Johnson, 1996). Supported employees are often left out of work cultures and stereotyped as clients, consumers, students, objects of charity, or robot-workers (Olson & Ferguson, 1992). While persons placed in

supported employment earned 3.5 times that of persons employed in sheltered workshops (Conley, 2003), substantial improvements are still needed (Conley, 2003). People with and without disabilities working side by side is a necessary but not a sufficient condition for social and work integration (Chadsey-Rusch & Beyer, 2001; DiLeo & Langton, 1993; Leach, 2002). Successful inclusion must be seen as an active process built through mutually beneficial partnerships of businesses, communities, and rehabilitation services that provide a more realistic work environment (Leach, 2002). This need for successful social integration and changed values resulted in two additional forms of employment services: natural supports and community-based vocational education (Bond, 1998; Leach, 2002).

Natural support. The strategies used to improve supported employment outcomes, such as higher wages and higher levels of integration, have changed since the mid-1980s. Innovations of natural supports and employer leadership have helped increase the capacity of the business community to include people with disabilities in the workforce (Mank, 2004; Mank, Cioffi, & Yovanoff, 2003). Additionally, the challenging job market of the 1990s produced a climate of economic uncertainty and the elimination of funding to SE agencies, encouraging the strategic use of workplace natural supports (Butterworth, Hagner, Kierman, & Schalock, 1996). Natural support occurs when relationships between workers with MR and supervisors/co-workers promote learning and enhanced performance (Bricourt, 2003; Mank, Cioffi, & Yovanoff, 1999, 2000, 2003). Natural support is any assistance, relationship, or intervention that allows people with MR to maintain and advance in a job of their choice. It also promotes non-disabled co-worker involvement as a means to provide consistent, ongoing training and follow-up services in an integrated work setting (Callahan, 1992; Kiernan & McGaughery, 1992; Rogan et al., 1993).

Work with natural support assists individuals with MR in becoming competitively employed (Nisbet & Hagner, 1988). Non-disabled co-workers serve as observers, mentors, skill trainers, associates, consultants, ongoing supervisors, advocates, and instructional program developers (Rusch, Hughes, Johnson, & Minch, 1991). They evaluate employees with MR and provide feedback regarding their social and work performance (Rusch et al., 1991). Co-workers assist employees with MR to develop productive work habits and social skills. These relationships with co-workers and organizational support influence social integration, job satisfaction, employment success, and job tenure of individuals with MR (Hill et al., 1986) and reduce their reliance on job coaches and other human service supports (Wehman, 1981).

Community-based vocational education. Community-based vocational education (CBVE) also emerged in the 1990s as an approach to delivering vocational education and training to individuals with MR by providing those services in community work settings rather than in conventional school environments (Albin, Rhodes, & Mank, 1994; Simmons & Flexer, 1992). To be prepared for life in integrated work and living situations, individuals with MR need experiential opportunities to deal with the demands and expectations of these environments (Wehman, 2006; Wehman, Kregal, Barcus, & Schalock, 1986). For example, individuals with MR need to learn the unstated rules of the workplace that are often related to social interactions and social reciprocity (Albin et al., 1994). They also need to learn to discriminate between novel and familiar situations (Wehman et al., 1986; Wehman, McLaughlin, & Wehman, 2005). When individuals learn to perform certain behaviors in real world natural work settings and interact with a variety of people, they are more likely to perform those behaviors in novel settings (Gaylord-Ross, 1986; Lagomarcino et al., 1989; Rusch, 1990). Hence, CBVE bridges the gap between classroom learning and competitive job placement.

Human Resource Initiatives: Changing Perspectives

Work-based experiences are critical educational adjuncts for the career and work development of adults with MR. Such experiences are dependent on willing employers and HR effectiveness in providing workplace supports, training, accommodations, and interventions that contribute to the improvement of companies' operational and organizational processes (Hernandez, 2000; Luecking, 2003). The persistently low rates of employment for people with MR and other disabilities may not be due to inherent or pervasive unemployability, but rather the degree to which workplaces and HR professionals are prepared for and able to enhance performance of people with MR and disabilities through workplace supports and accommodations. Employment interventions can facilitate the achievement of a more accessible workplace for individuals with MR. The next section presents inducements to hiring workers with MR, HR and organizational development issues, and job retention factors.

Organizational Inducements to Hiring Workers with MR

Individuals with MR provide an untapped reservoir of qualified workers (Timmons, Boeltzig, Hall, Hamner, & Fesko, 2006). Organizations looking for creative staffing solutions in a tight labor market can benefit from employing people with disabilities and specifically adults with MR (Petkauskos, 2005; Younes, 2001). Due to a shift in workforce demographics, the number of individuals without disabilities who are willing to work in entry-level positions has decreased and is projected to continue to decrease (DiLeo & Langton, 1993; Whitehead, 1990). Many people with MR are ready, willing, and able to work (Kennedy & Olney, 2001), and they are the largest source of underutilized talent in our labor force (Green & Brooke, 2001). People with MR increase the availability of potential workers, and this labor pool is a good source for business growth (Younes, 2001). Economic development will require businesses to hire more

workers of varying backgrounds, cultures, and races, including people with disabilities (DiLeo & Langton, 1993; Hagner & DiLeo, 1993). Having people with MR and disabilities in the work setting increases diversity (Cox, 1993; Levy, Jessop, Rimmerman, & Levy, 1991), giving these organizations a competitive advantage (Colella, 1996; Cox, 1993; Holmes, 2005).

Organizations employing individuals with disabilities receive tax incentives and government contracts. These organizations are also viewed as socially responsible by the community which improves their corporate image (Petkauskos, 2005). Furthermore, corporations have reported favorable experiences in employing people with MR (Olson, Coioffi, Yovanoff, & Mank, 2001). Employers that have incorporated workers with MR into their workforce have discovered that hiring these individuals is not a question of community service, but rather good business (Hagner & DiLeo, 1993). Some employers (e.g., Citizens Bank, Fleet Financial, Harvard University, and Massachusetts General) have taken their commitment to employing people with disabilities to a higher level and formed the Business Leadership Network coalition which is committed to making the workplace friendlier for people with disabilities (Holmes, 2005; Van Lieshout, 2001). Other employers have realized that the skills co-workers learn when assuming supportive roles benefit the company as a whole (Mank & Buckley, 1988; Nisbet & Hagner, 1988; Rogan et al., 1993). Pizza Hut, Inc., MacDonalds, the Marriott Corporation, and others have initiated their own efforts to hire and support people with MR, using internal company resources such as natural support systems (Wehmeyer, 1998). Additionally, as more people with MR enter the workforce, employers' perceptions of them improve because they demonstrate equal or better productivity than non-disabled workers (Brostrand, 2006).

People with MR have a lot to offer employers. An employer's survey illustrated the positive contributions and abilities of employees with MR (Blanck, 1998; DuPont, 1993). More

than 96% of employers reported that they were very satisfied with their employees' work attendance and safety records. More than 78% of employers were satisfied with the employees' dedication to work, and 95% stated that employees with MR did not have any higher turnover rates than employees without disabilities (Blanck, 1998; DuPont, 1993). Sixty percent of employers were very satisfied with the workers' productivity and initiative (Blanck, 1998; DuPont, 1993). People with MR typically are not job hoppers and are loyal, diligent workers (Blanck, 1998). Furthermore, group health plans and related employee benefit programs are not adversely affected by hiring people with MR (Blanck, 1998).

Historically, approaches to employment of individuals with MR (i.e., sheltered workshops and supported employment) relied heavily on vocational rehabilitation professionals who provided training and support (Hagner & Cooney, 2003). However, high level of rehabilitation professionals' support can be intrusive for organizations (Hagner & Cooney, 2003). Thus, the current trend is to move away from a strong reliance on rehabilitation professionals towards internal organizational support. This, coupled with emphasis on competitive, integrated employment and available qualified and willing workers with MR, requires more attention from human resource development (HRD).

Human Resource Development

Workers with MR may require different forms of training, employee development, and career development than non-disabled employees. Yet, disability has received little research attention in HRD literature (McLaughlin, Bell, & Stinger, 2004). HRD practices have given little attention to the development of effective relationships between workers with MR and employers (Blackorby & Wagner, 1996).

When employers are aware of the availability of people with MR as a supplemental labor pool, they are often concerned with not having the experience and/or HRD resources to adequately support their employment (Butterworth & Pitt-Catsoupes, 1997). However, when HRD provides the appropriate supports and initiatives for workers with MR, employers' views about MR improve (Hernandez, 2000). They view employees with MR at least as easy to supervise and as productive as their non-disabled co-workers (Hernandez, 2000; Luecking, 2003; Stone & Michaels, 1993).

The quality and quantity of workplace experience are contingent on the preparation of workplaces to support the needs of individuals with MR. The purpose of HRD is to improve organizational performance through increased productivity, efficient work processes, and individual contributions (Swanson & Arnold, 1996). Research on human performance and individual contribution (i.e., person-job fit, job satisfaction, self-determination, and personality characteristics) has been conducted among non-disabled populations, but these findings may not be applicable to people with MR. For example, job satisfaction research shows no correlation between job satisfaction and job performance of non-disabled workers (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993) and high correlation for individuals with MR (Wehmeyer & Kelchner, 1995, 1997). Thus, organizational development (OD) theory and practice as they relate to employment of workers with MR needs to be examined.

Organizational development is “a series of planned processes by which human resources are identified, utilized, and developed in ways that strengthen organizational effectiveness by increasing problem-solving capabilities and planning” (Rothwell, Sullivan, & McLean, 1995, p. 7). Healthy companies are presumed to be those that generate quality products and services by continually addressing and making adjustments to internal quality areas. Such internal quality

areas refer to job design, employee selection and management, employee role clarification, work flow dynamics, job analysis, and supervisory communication. Optimal performance is achieved when these internal quality areas are continually addressed and improved (Luecking, 2003). Companies that fail to manage these internal quality areas experience employee turnover, retention problems, and decreased outputs leading to decreased profits (Cohen & Walker, 2001; Drinen, 2001). Each of these internal interventions has parallels within the field of employment and intervention services for individuals with disabilities and MR. For example, coaching and mentoring are OD interventions that formalize a helping relationship in which a worker receives guidance related to work and/or interpersonal problems. This coaching/mentoring parallels job coaching for individuals with MR (Luecking, 2003). Job analysis, the means of analyzing and subsequently formalizing duties performed by job incumbents, parallels the job analysis approach in the field of vocational rehabilitation (Rothwell et al., 1995). OD process improvement interventions, an approach to change how processes (and jobs) are performed to make them more effective and efficient, parallels job and work accommodation interventions for workers with disabilities and MR (Luecking, 2003).

If applied in the context of OD, many of the strategies that vocational rehabilitation professionals and job coaches currently provide will result in both improved company output and work experiences for individuals with MR. Reinforcing this notion, Bolles and Brown (2001) suggest that accommodations made for workers with MR often adds to innovation, improving the productivity of other workers in the organization.

Job Retention

Job retention ensures work, a means by which an individual earns a living, engages in a productive and meaningful activity, enhances one's self-concept, and improves independence

(Anthony, 1994). Successful job retention helps people with MR establish social relationships, develop self-confidence and self-determination, and improve their quality of life (Roessler & Rubin, 1998; Storey et al., 1991). This section discusses factors that influence JR in workers with MR, including external (societal and work), internal (work personality, job attitudes, and job behaviors), and work related-social behaviors. Following is the discussions of JR retention factors, and then Roessler's (2002) 3M Job Retention Model is presented.

External Societal Factors Influencing Job Retention

The external societal factors affecting job retention include (a) government support and infrastructure, (b) economics, and (c) societal attitudes and behaviors.

Government support and infrastructure. Federal and state initiatives provide a public policy framework to promote employment services placing persons with disabilities into private sector, government, and community jobs (Bellamy et al., 1988). Infrastructure provides on-site training and support that individuals with MR need to keep their jobs (Bellamy et al., 1988). Government and community services, whether it is supervision, training, educational transitioning, or transportation, must be ongoing and involve the continuing expenditure of public funds (Federal Register, 1984).

Economics. Economic barriers are a frequently cited reason for unemployment of individuals with MR. Supplemental Security Income and Social Security Disability Insurance payments (Social Security Administration, 1987) are adjusted downward to allow for employee wages (Lagomarcino et al., 1989; Rusch, 1990). Individuals in supported employment programs do not earn sufficient wages to be self-supportive because of welfare reform, and many lose government supplemental income once employed. Thus, welfare reform causes some individuals with MR to stay in welfare programs rather than to work (Hahn, 1999).

Societal attitudes and behaviors. The ADA (1990) removed many physical and legal barriers to work, but no law can remove the ultimate barrier – people’s attitudes and behaviors (Pimentel, 2001). The attitudes of employers can affect employment outcomes for people with disabilities despite the ADA. Discrimination in the work world is still a serious problem for people with disabilities (Kennedy & Olney, 2001). The legal protection of the ADA must be supported by changing employer attitudes that foster job discrimination (Kennedy & Olney, 2001).

Strohmer et al. (1998) identified a hierarchical order of social and work acceptance of disability. Harris and Associates Surveys (1986, 1998, 2000) suggest that within this hierarchical order, mental retardation and mental illness have consistently been identified as the least accepted disabilities, resulting in greater social distance and less opportunity for people’s social (Karnilowicz et al., 1994; Lyons & Hayes, 1993) and employment integration (Konig & Schalock, 1991). Furthermore, individuals with physical disabilities receive more favorable evaluations in the application process than do individuals with cognitive or emotional disabilities (Brodieri, Drehmer, & Taylor, 1997).

The severity of the disability determines employment opportunities. Individuals with severe disabilities have greater disadvantages (Harris & Associates Survey, 2004), and the label mentally retarded adversely affects employer expectations of job success (Millington, Szymanski, & Hanley-Maxwell, 1994). Individuals with disabilities also face prejudice in the form of devaluation, invisibility, and stigmas in the corporate world (Asch & Fine, 1988; Fulton & Sabornie, 1994; Gill, 1997). These unfavorable attitudes and uneasiness are partly created due to limited interaction with people with MR. Individuals with disabilities need exposure to the outside world, and society benefits from this exposure. Employers are most favorable toward

employing individuals with disabilities if they had positive previous experiences with them (Levy, Jessop, Rimmerman, & Levy, 1992). Prejudice creates barriers for people with MR in terms of community and work involvement and the ability to learn social skills (Lagomarcino et al., 1989).

Adults with MR are also at greater risk than others for neglect and abuse, including sexual assault and financial exploitation from co-workers or supervisors. Neglect and abuse may permanently damage people's health leaving them more vulnerable to further maltreatment (Partnership for People with Disabilities, 2006). Unfortunately, recognition of maltreatment of persons with MR is complicated by a number of factors, including society's general denial of this problem and individuals' communication challenges and isolation.

Since stereotypes and prejudices are difficult to change (Pimentel, 2001), individuals with disabilities themselves are improving their public image. For example, a person with MR invents a device to improve assembly line production; a person with epilepsy achieves popularity as a major league hockey player; a person who suffers from a debilitating neurological disorder becomes a leading physicist (Pimentel, 2001).

External Workplace Factors Affecting Job Retention

Workplace factors that lead to job retention of individuals with MR include (a) on-the-job training and support, (b) vocational training, and (c) work adjustment services (Chadsey-Rusch, 1986). These interventions create a continuous post-job placement support system, which is an essential element to improve job performance and retention (Cook & Rosenberg, 1994; Wehman, 1996).

On-the-job training. On-the-job training is a planned process of developing task-level expertise and skills in employees by training them in the actual work setting (Jacobs & Jones,

1995). Individuals with MR that are provided on-the-job training are more rapidly placed into paid community employment than those who attend more conventional, classroom training (Rusch & Mithaug, 1980). These individuals are more likely to remain employed nine months after placement than those undergoing unpaid, sheltered work training (Bond et al., 1995). These individuals with MR also socialize more often with non-disabled co-workers and are more often competitively employed (Barcus, Griffin, Mank, Rhodes, & Moon, 1988; Drake, McHugo, Becker, Anthony, & Clark, 1996; Kiernan & Stark, 1986; Rusch & Mithaug, 1980). As a result, they achieve higher employment rates, wages, and job satisfaction and lower absenteeism (Bond et al., 1995; Cook & Razzano, 1995; Wehman & Moon, 1988).

Vocational training. Vocational training develops competency in a particular skill, preparing a person for a specific occupation and work (Wright, 1980). Vocational training helps individuals with MR adjust to the demands of community and work, while reducing any economic or social burdens that may impede the total rehabilitation process (Rubin & Roessler, 1987). Vocational services and on-the-job training provide remedial work experiences designed to promote the acquisition of work-related social behaviors and habits and to modify attitudes and behaviors inhibiting satisfactory job performance (Wright, 1980). Additionally, vocational and on-the-job training increase physical and emotional tolerance for work activities and interpersonal relationships (Wright, 1983), helping individuals with MR make choices, establish and maintain independence, and evaluate their progress and status.

Adjustment services. Adjustment services include social, work, and job adjustments for the individual worker (Dawis, 1994). Social adjustment is the degree to which an individual is able to meet and conform to personal and social responsibilities and standards set by the community (Wright, Butler, & Aldridge, 1968). Such adjustment is accomplished through a

structured program designed to assist individuals with MR to interact and socialize with other individuals and groups. Work adjustment training helps develop appropriate work personality characteristics and establish relationships within the work environment. These relationships are formed with the work itself, the physical surroundings, and the social relationships between worker and employer (Dawis, 1994). Job adjustment depends upon the compatibility between one's work personality and the work requirements (Wright, 1980). The employee's work personality should correspond with the qualities and behaviors considered appropriate to the given work environment. Work adjustment services, training, and support help individuals with MR improve behaviors and skills and build positive attitudes to develop self-confidence, self-control, and work tolerance.

Internal Individual Factors Influencing Job Retention

Individual factors have been, and still are, considered the greatest deterrent to successful employment and job retention for individuals with MR (Chadsey-Rusch, 1986, 1992; Lagomarcino et al., 1989; Rosenberg & Brady, 2000). Even in the non-disabled populations, work personality traits are important to job retention. Organizational psychologists and HR professionals have studied the relationships between work personality characteristics and its predictability of job retention, performance, and job satisfaction (Brief & Robertson, 1987; Mathieu & Farr, 1991). Internal individual factors that affect job retention include (a) work personality and (b) job attitudes and job behaviors, both building on work-related social behaviors and job-related routines.

Work personality. Work personality refers to behavior patterns exhibited in a work situation or the manner in which an individual enacts a work role (Wright, 1980). Work

personality includes an elaborate set of attitudes, opinions, beliefs, and feelings and helps employees cope with a variety of work demands in competitive employment (Neff, 1976). Work personality is developed through the work maturation process that occurs in education, work, and family contexts (Neff, 1976). Family provides behavioral patterns and motivational systems that induce children to achieve and become productive. School continues the process of learning the responsibility of work and relationships with peers and authority figures away from home. Household chores are later replaced by after-school and summer employment, gradually developing work personality and preparing children for the pressures and tensions of the adult work life. The process of work maturation for individuals with MR is often disrupted by parental attitudes and separation at school (Association of Retarded Citizens, 1994). The birth of a child with an apparent disability induces parental attitudes of over-protection or rejection. Parents may have low expectations of their sons and daughters with MR, often depriving them of family chore responsibilities (Association of Retarded Citizens, 1994). Lower standards for individuals with MR diminish the achievement drive.

Job attitudes and job behaviors. Job attitude results from people's beliefs about their jobs and shapes their job behavior. Employees' beliefs about the job (e.g., co-workers are not nice) shape their attitudes about the job (e.g., job dissatisfaction). Job attitude affects behavioral intentions, for example, one's intention to reduce effort (Brief & Robertson, 1987). These behavioral intentions are translated to actual behaviors, such as absenteeism or leaving the organization (Brief & Robertson, 1987). In the case of positive job beliefs and attitudes, behavioral intentions may include coming to work on time, putting forth extra effort, or improving performance (Fishbein & Ajzen, 1975).

The relationship between job attitudes and job behavior is complex (Hackett, 1992). For example, negative job attitudes do not always lead to poor performance, turnover, or absenteeism. Job behavior may be affected by other factors, such as strong work ethics or a lack of alternative employment. For instance, when unhappy employees must remain in their jobs because they have no alternative employment (Mathieu & Farr, 1991). Job attitudes are presumed to have a predictive relationship with job satisfaction and job performance. Attitudes toward the job, work environment, self, and others affect job behaviors and employability leading to work motivation and job retention (Chadsey-Rusch, 1992; Mathieu & Farr, 1991). Work personality, job attitude, and job behavior contribute to an individual's work-related social behaviors and their performance in job-related routines or daily living skills.

Work-related social behaviors. The work-related social behaviors required for successful job retention include: (a) social awareness (Chadsey-Rusch, 1992; Rosenberg & Brady, 2000), (b) temperament (Wehman & Kregel, 1998), and (c) personality characteristics (Brady & Rosenberg, 2002). Social awareness includes appropriate interaction with supervisors and co-workers, offering assistance, and understanding of the work environment (Greenspan & Shultz, 1981; Hanley-Maxwell et al., 1986; Martin et al., 1990). Temperament includes adaptive, subordinate, and aberrant behaviors (Hill et al., 1986), ability to deal with the pressures and stress of the job, and self-control (Salzberg, Lignugirs-Kraft, & McCuller, 1988). Personality characteristics include one's approach to personal appearance and hygiene (Greenspan & Shultz, 1981; Martin et al., 1990) and the ability to cooperate, accept constructive criticism, manage time, express appreciation, value honesty, and conform to socially acceptable standards of truthfulness (Rosenberg & Brady, 2000).

Roessler's 3M Job Retention Model

Roessler's (2002) 3M Job Retention Model represents the only model of job retention for individuals with disabilities. This model includes three constructs: match, maturity, and mastery. Match refers to a fit between people, their job, and work environment. A careful job match that takes into account individual interests, skills, and abilities results in good job performance and job retention (Chadsey-Rusch, 1986; Leach, 2002). Matching involves two indicators: (a) correspondence and (b) satisfactoriness and satisfaction. Satisfactoriness occurs when the person possesses and uses work-related social behaviors and skills needed to meet job demands (Roessler, 2002). Satisfaction occurs when the job provides activities that reinforce personal preferences. Thus, employees are good at what they do (satisfactory) and like what they do (satisfied). Maturity includes challenges of developing self, including (a) stabilizing and securing one's place in the organization by assimilating to the organizational culture and performing job duties satisfactorily (Super, Savickas, & Super, 1996) and (b) demonstrating positive work attitudes, behaviors, and habits along with good co-worker relationships (Roessler, 2002; Super et al., 1996). Mastery describes behaviors needed to adjust to the job and task demands and to cope with the idiosyncratic situations arising daily in the workplace. If employees cannot meet critical job demands, they are considered under-performers and ultimately terminated. If employees are not involved in and satisfied with the job, they might voluntarily leave the workplace (Roessler, 2002).

Building an Integrated Job Retention Model: A New Perspective

Roessler's (2002) 3M Model focuses on important components of job retention for individuals with disabilities. These components include work-related social behaviors and the need to adjust behaviors to meet the job and task demands and cope with daily idiosyncrasies.

However, Roessler (2002) suggests further research to understand if person-job fit is related to levels of job satisfaction and job tenure and if new work behaviors and skills relate to improved levels of job satisfaction and tenure.

Roessler's 3M Model looks at the person-job match, but it neither provides evidence whether the match is a predictor of job satisfaction or job retention nor addresses the interrelationships between the variables. For example, the maturity component suggests that obtaining and improving job skills and appropriate work-related social behaviors are important to one's performance; however, the model does not identify any relationship between these work behaviors and job satisfaction. Furthermore, self-determination, identified by recent research as an important factor to job satisfaction, performance, and job retention is not addressed in the 3M Model (Lofquist & Dawis, 1991; O'Brien & Lovett, 1992; Rosenberg & Brady, 2000).

Work-Related Social Behaviors

Good work-related social behaviors in individuals with MR affect job satisfaction and job performance, leading to successful job retention (Callahan & Garner, 1997; Chadsey-Rusch, 1992; Rosenberg & Brady, 2000; see Figure 2).

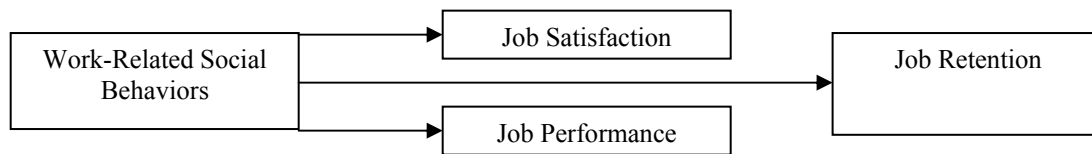


Figure 2. Work-related social behaviors, job satisfaction, job performance, and job retention.

Job-related routines are daily life skills that are not part of the job but vital to successful performance and productivity (Callahan & Garner, 1997). These routines may occur either on-site or off-site and include commuting to and from work, personal and work scheduling, and managing finances, including banking and budgeting (Bellamy et al., 1988; Callahan & Garner, 1997; Rosenberg & Brady, 2000). Knowing how to use public transportation allows productive

and independent living for individuals with MR. Employment opportunities may be superfluous if they are not within easy access to public transportation or if the distance and complexity of travel are beyond the physical or mental capacity of the individual (McLoughlin, Garner, & Callahan, 1987).

Person-Job Congruency

Successful job placement and retention are based on a person-centered approach to employment and satisfaction of workers with MR. A person-centered approach is the process of discovery of individual aims, aspirations, and skills (Leach, 2002; Super, 1990). Individuals with MR get encouragement and guidance in pursuing their interests, desires, and goals while receiving assistance from their family members and service providers (Mount & Zwernik, 1988). Person-centered approach provides for person-job congruency or a match between a person's interests, characteristics, skills, and abilities (both behavioral and cognitive) with the job requirements and work environment (Holland, 1996; Lofquist & Dawis, 1991; Roessler, 2002; Zifferblatt & Hendricks, 1974). Successful person-job congruency requires careful planning and increases employee job satisfaction and job performance (Becker, Drake, Farabaugh, & Bond, 1996; Konig & Schalock, 1991; Leach, 2002) leading to higher job retention (Holland, 1996; see Figure 3).

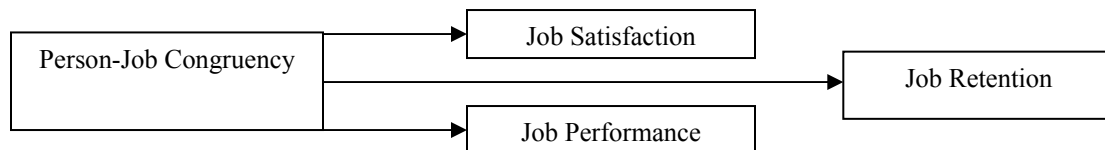


Figure 3. Person-job congruency, job satisfaction, job performance, and job retention.

The focus on abilities rather than impairments of individuals with MR leads to increased work effectiveness and self-determination (Lofquist & Dawis, 1991; O'Brien & Lovett, 1992).

Self-Determination

Self-determination emerges from learning across the lifespan and enables a person's self-realization, goal-directed, self-regulated, autonomous behavior (Field, Martin, Miller, Ward, & Wehmeyer, 1998; Wehmeyer, 2001; Wehmeyer & Palmer, 2003) and discovery of individual aims, aspirations, and skills (Leach, 2002). Autonomy includes independence and the ability to act on the basis of preferences. Individuals with MR enhance their autonomy on the job by learning self-management skills that help them find cues, create records of their work, evaluate their own performance, and provide themselves with feedback (Turner, 1995; Wehmeyer, 1996a, 1998, 2001).

More self-determined individuals are more independent and significantly more likely to work for pay at higher hourly wages (Wehmeyer & Palmer, 2003). Self-determination empowers individuals to plan and make choices about their careers, work, and life (Biklen, 1988; Mithaug, Martin, Husch, Agran, & Rusch, 1988; Wehmeyer et al., 1998). Enhanced self-determination of adults with MR moves these individuals to community-based work and independent living environments (Stancliffe, Abery, & Smith, 2000; Wehmeyer & Bolding, 1999, 2001). When individuals with MR capitalize on their self-determination (Wehmeyer et al., 1998; Wehmeyer & Bolding, 2001), they are more likely to find competitive employment opportunities and achieve job satisfaction and job retention (Mount & Zwernik, 1988), and maintain good performance (Wehmeyer, 2001; see Figure 4).

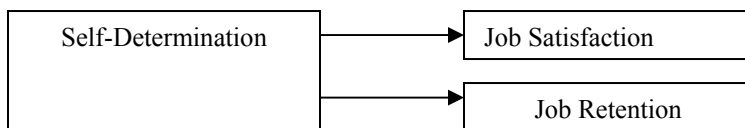


Figure 4. Self-determination approach to job retention.

Job Performance

With proper placement, job match, and support, workers with MR perform their jobs equal to or better than non-disabled at entry-level position (Rosenberg & Brady, 2001). With appropriate work-related social behaviors, workers with MR adapt quickly and satisfactorily to the conditions of the job. Job performance depends on job responsibility and task production (Rosenberg & Brady, 2000; Sitlington & Easterday, 1992; Wehman & Kregel, 1985).

Job responsibility is one's commitment and dedication to a job. Job responsibility involves such personal characteristics as work endurance, work motivation, work initiative, and work attitude (Lagomarcino et al., 1989). Responsible employees follow directions, company procedures, and safety regulations (Rosenberg & Brady, 2000), ask for a supervisor's or co-worker's assistance (Salzberg et al., 1986), take care of work equipment and materials, meet work schedules, and maintain good attendance (Sitlington & Easterday, 1992).

Task production refers to the ability to perform specific work tasks that require certain quality and quantity of work. Quality of work is the employees' ability to work at the accepted standard for accuracy and engage in quality control assessment when finished with a task. Quantity of work is the employees' ability to work at an accepted rate and pace of productivity (Rosenberg & Brady, 2000). Task production is affected by employees' ability to communicate verbally and non-verbally to express themselves and be understood while performing a task (Martin, Elias-Burger, & Mithaug, 1987).

For an individual with MR, good job performance improves job retention and increases job satisfaction. Their poor job satisfaction leads to job loss (Roessler & Rumrill, 1998). Thus, strategies to improve job retention in individuals with MR should focus on job satisfaction (Roessler, 2002; See Figure 5).

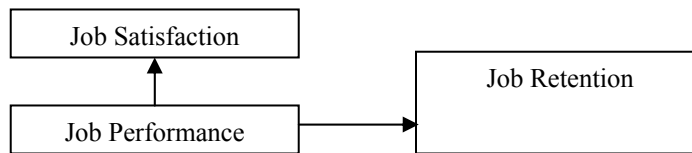


Figure 5. Job performance for successful job retention and job satisfaction.

Job Satisfaction

Job satisfaction refers to the degree to which people like their jobs (Spector, 1997) and the feelings about their job or job experiences in relation to previous experiences, current expectations, or available alternatives (Balzer, Kihm, Smith, Irwin, Bacheochi, & Robie, 2000). Measures of job satisfaction include: (a) other people, such as coworkers or supervisors; (b) nature of work itself and job conditions; (c) rewards, such as fringe benefits, pay, appreciation, recognition, personal growth, and security; and (d) organizational context, such as the organizational structure, policies and procedures, and communication (Locke, 1976; Spector, 1997).

Job satisfaction increases intrinsic motivation and personal well-being (Petrovski & Gleeson, 1997; Spector, 1997) and lowers work-related accidents (Balzer et al., 2000), stress, and discord within work groups (Tett & Meyer, 1993). Job dissatisfaction has been related to absenteeism, tardiness, grievances, and turnover, which is costly to the organization (Porter & Steers, 1973; Talkington & Overbeck, 1975; Tett & Meyer, 1993). Job satisfaction affects work attendance, maintenance of quality standards, and willingness to search for improved work methods and to cooperate with other employees (Balzer et al., 2000). Since job satisfaction has also been associated with life satisfaction and mental and physical health (Balzar et al., 2000; Spector, 1997), improved satisfaction has become an important outcome of work (see Figure 6).

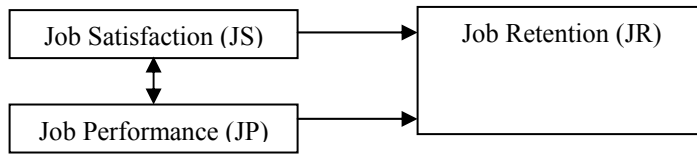


Figure 6. Relationship between job satisfaction, job performance, and job retention.

Research on job satisfaction in populations with disabilities is limited. In the non-disabled population, a relationship between job performance and job satisfaction is not significant (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993). However, observations of employees with MR suggest the opposite: job satisfaction correlates highly to job performance and job retention (Cranny, Smith, & Stone, 1992; Mueser et al., 2001).

When organizations introduce interventions to improve employee productivity and quality of work life, measures of job satisfaction can be used to evaluate changes. Assessment of job satisfaction is a common activity in many organizations. Five different job satisfaction instruments exist for the non-disabled population: Job Satisfaction Survey (Spector, 1985), the Job Descriptive Index (Ironson & Smith, 1981; Smith, Kendal, & Hulin, 1969), the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, & Lofquist, 1967), the Job Diagnostic Survey (Hackman & Oldham, 1976), and the Job in General Scale (Ironson, Smith, Brannick, Gibson, & Paul 1989).

A Proposed Job Retention Model

The review on the literature was not sufficient in answering the research questions as the interrelationship between important work variable and individuals with MR was not addressed. Based on the various theories and concepts found in the literature, including Roessler's (2002) 3M Job Retention Model, job satisfaction, job performance, person-job congruency, and self-determination theories, a new conceptual model of job retention evolved (see Figure 7).

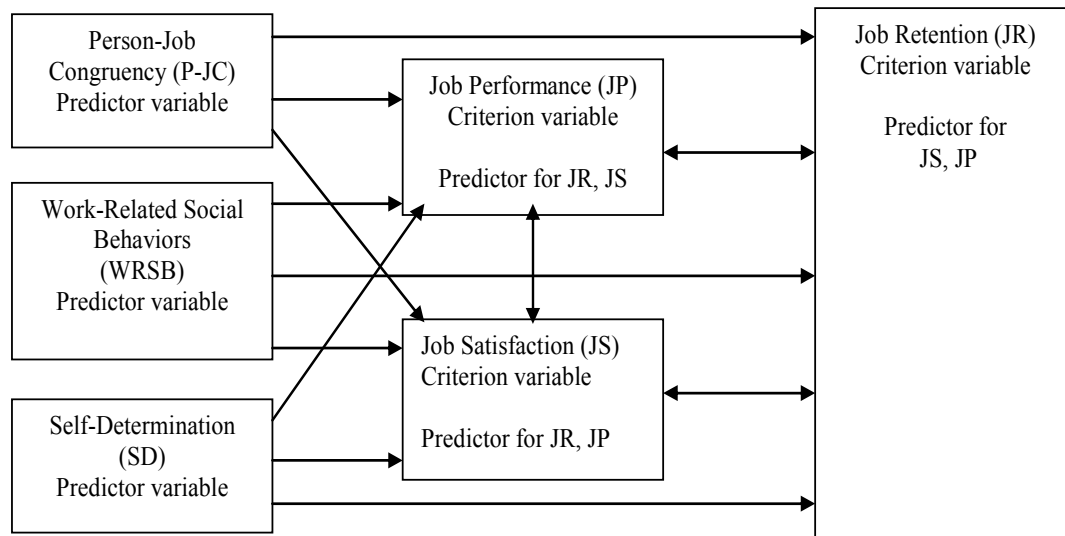


Figure 7. A conceptual model of job retention for workers with MR.

To improve job retention and employability in individuals with MR, corporate attitudes and perceptions have to change (Habeck, 1999). This change requires more active participation of businesses and communities employing and engaging individuals with MR in the workplace and integrating them into community activities (Colella, 1996). Still the most successful way to overcome employers' resistance is through successful job retention of persons with MR who turn out to be good workers (Colella, 1996; West, 1992). This proposed JR model may offer HR professionals a useful structure for understanding and implementing job retention interventions for people with MR.

Summary

Chapter 2 examined the literature around workplace integration and inclusion, societal perspectives on disability, legislative initiatives, and vocational rehabilitation approaches to employment strategies, and human resource initiatives. Following was a discussion around job retention including the factors effecting job retention for workers with MR, and a new perspective on building a job retention model. Finally, a proposed job retention model was presented. In Chapter 3, the research method (research design, setting, sampling, data collection,

and analysis procedures), including the use of multiple regression correlation statistics, is discussed. Chapter 4 presents the findings of the study, and Chapter 5 concludes the study with a summary, implications, and recommendations.

CHAPTER III

METHOD

This section begins with the purpose of the study and the research questions repeated from Chapter 1. Following is a description of the research design, the population and sample, and the variables and instruments use to measure the variables. The chapter concludes with a discussion of the procedures for data collection and data analysis.

Purpose of the Study

The purpose of this study was to test a hypothesized job retention (JR) model (see Figure 1) for adult workers with mental retardation (MR) by examining the predictive relationships between such factors as work-related social behaviors (WRSB), self-determination (SD), person-job congruency (PJC), job performance (JP), job satisfaction (JS), and job retention (JR).

Research Questions and Hypotheses

The overarching questions were: (a) Are work-related social behaviors, self-determination skills, person-job congruency, job performance, and job satisfaction related to job retention in workers with MR? (b) Are job satisfaction, retention, work-related social behaviors, self-determination, and person-job congruency related to job performance in workers with MR? (c) Are these same variables related to job satisfaction in workers with MR? To explore these questions three research hypotheses were tested:

H1. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JS would account for a significant amount of variance in the dependent variable, JR.

H2. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JS, and JR would account for a significant amount of variance of the dependent variable, JP.

H3. In working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JR would account for a significant amount of variance in the dependent variable, JS.

Research Design

The framework for this study was derived from theories and concepts relevant to long-term employment of individuals with MR. The quantitative study uses an *ex post facto* research design with hypotheses and alternative hypotheses. The study used three sets of multiple regression analyses to test the hypotheses and examine the relationships between work-related social behaviors, self-determination, person-job congruency, and an individual's job satisfaction, job performance, and job retention in adult workers with MR. Multiple regression is a predictive method that allows for the analysis of a large complex array of variables in an encompassing and integrated analysis accounting for correlations among several independent variables and one dependent variable (Harlow, 2004; Tabachnick & Fidell, 2001). A research study incorporating concepts of multiplicity is more rigorous, generalizable, and reliable producing more valid results (Harlow, 2004). Although a predictive relationship between these variables does not infer cause and effect, if the independent variables are shown to be related to job retention, an assessment instrument would be useful to identify those factors or qualities in adult workers with MR.

Structural equation modeling has some very rigid underlying assumptions. The questions of interest in this study could be more directly estimated by writing regression models. Structural equation models introduce elaborations and additional complexity without more effectively targeting the questions of interest. Regression modeling is also likely to be more robust than structural equation modeling since it has less stringent underlying assumptions; therefore, regression was used.

Population and Sample

A description of the population and sample is presented followed by a discussion of the procedures for selecting and evaluating the instruments used to measure the predictor variables. Then a discussion around analyzing and managing the data is presented.

Population

The population of interest was composed of working adults (both male and female, age 18 or older) with MR. The participants were selected from eight supported employment and/or workforce development agencies. These individuals were employed in the open labor market earning a competitive wage for at least 3 months. In South Florida alone, the potential group of participants totaled 2,026 working adults with MR in supported employment (Florida Developmental Disability Council, 2006). The selected employees with MR were active in various jobs, including animal caretakers, laundry, building maintenance assistance, mail clerks, food service, clerical work, clerical aids, manufacturing/assembly, bench work, janitorial, dishwashers, lawn maintenance, grocery baggers, and restaurant/store host.

Sample

A convenience sample was used due to the limited access to and availability of the MR population. A convenience sample is a purposely heterogeneous population from which generalizations of the population is possible (Harlow, 2004). For prediction methods, such as multiple regressions, a sample size of at least 5 and up to 50 participants per independent variable is suggested (Green, 1991). Given that this study had five independent variables (IV), a minimum total sample size of 25 was suggested (Green, 1991). However, a sample size of at least 100 adults with MR was selected to account for unusable data because of missing information and to increase the statistical power. Only those individuals with English as their

first language were included in the study to avoid confusion in translation that could bias the study.

Variables and Instruments

A test battery of four standardized instruments was used for the study. The predictor (IVs) variables were work-related social behavior, self-determination, person-job-congruency, job performance and job satisfaction. Both job performance and job satisfaction were also the criterion variables in H2 and H3 respectively, and job retention was the criterion variable in H1. Job retention was measured by the number of months the participant was employed continuously at the same job in the open labor market earning a competitive wage.

All instruments were chosen for their ease of comprehension and use, theoretical base development, high reliability, and validation with populations with MR (Brady et al., 2006; Holland, 1985; Ironson et al., 1989; Wehmeyer, 1996). The instruments had a simple grammatical sentence structure of the items. The sentence content was concrete, not requiring abstract thinking. The two to three choices (rather than the usual 5-7 of the Likert-type scale) minimized the use of judgment that is necessary when dealing with individuals with cognitive impairments.

Job Observation and Behavior Scale: Opportunity for Self-Determination (JOBS: OSD)

The Jobs Observation Behavior Scale: Opportunity for Self-Determination (JOBS:OSD) (Brady, Rosenberg, & Frain, 2006) was used to measure the work-related social behavior and job performance variables. The 30-item instrument is composed of three sub-scales. Work Required Daily Living Activities (DLA) subscale contains 13 items which summarize the patterns of self-care and personal behavior that allow individuals to function within a competitive work environment. Work-Required Behaviors (BEH) subscale contains 8 items that represent the

interpersonal and social skills needed for employment. Work-Required Job Duties (JD), containing 9 items, characterizes the actual job task functions, productivity, and performance, common to entry level jobs.

JOBS: OSD includes a 3-point Likert-type scale ranging from 1 (*no*), 2 (*sometimes*), to 3 (*yes*). An overall job performance score was obtained by summing the scores on the three subscales, BEH, JD, and DLA. The raw score for the combined subscales ranges from 35 to 175. The higher the participant's score, the stronger the job performance (Brady et al., 2006). The overall work-related behavior measurement was obtained by summing the scores on the BEH and DLA. The raw score for the BEH and DLA combined subscales ranged from 25 to 125. The higher the score on these subscales, the stronger their work-related social behaviors. Content validity of *JOBS: OSD* was established by Brady et al. (2006) by linking the actual *JOBS: OSD* survey items to the items of the original *Job Observation Behavior Scale* (Brady & Rosenberg, 2002). The *Job Observation Behavior Scale* is a supervisor's assessment of employees' job performance and work-related behaviors. The content validity for the original *JOBS* items was established by linking those items to prior research in the area of work adjustment, employability for entry-level positions, and supported employment. Concurrent validity of *JOBS: OSD* was obtained through a factor analysis of the items on the *JOBS: OSD* to establish and compare Quality of Performance Composite scores against the Brigance Diagnostic Employability Inventory (Curriculum Associates, 1995). The 20 Brigance items were correlated with the *JOBS: OSD* Quality Performance items (Brady et al., 2006). Test/re-test reliability was established by comparing the Quality of Performance provided of the person to the scores of the same instrument 2 weeks later. The test/re-test reliability for the Quality of Performance is 0.83 (Brady et al., 2006).

The Job-in-General Scale (JIG)

The Job-in-General (JIG) Scale (Ironson, Smith, Brannick, Gibson, & Paul, 1989) measured the job satisfaction variable. The *JIG* is an 18-item scale that measures overall global job satisfaction (Ironson et al., 1989). Each item is a short phrase about the job in general. The *JIG* uses three response choices. For each item, participants are asked if they agree (*yes*), disagree (*no*), or are not sure (?). Negatively worded items are reversed-scored, and the total score is the sum of the responses. The higher the overall score the greater the indication of job satisfaction. Internal consistency and reliability was measured by Cronbach's alpha of .91 to .95 (Smith et al., 1969). Convergent validity has been demonstrated through statistically significant correlations with four other global job satisfaction scales, ranging from correlations of $r = .66$ to .80 (Balzer et al., 2000).

The Arc's Self-Determination Scale (ARC)

The Arc's Self-Determination Scale (Wehmeyer, 1996; Wehmeyer & Palmer, 2003) measured the self-determination variable. The ARC (Wehmeyer & Kelchner, 1995, 1997) is a self-report measure of self-determination designed for use by adolescents and adults with cognitive disabilities and mental retardation (Wehmeyer et al., 1998). The scale measures overall self-determination and domain areas such as autonomy, self-regulation, psychological empowerment, and self-realization. The scale includes 4-point Likert-type scale items, story completion items (i.e., the beginning and ending of a story are provided and the individual writes or tells the middle section), items that require identifying and breaking goals into smaller steps, and multiple choice items (between two options). On the scale, 148 points are obtainable. Higher scores reflect higher self-determination. The Scale's concurrent criterion-related validity was established by showing relationships between the *ARC* and conceptually related measures. The

factorial validity was established by repeated factor analyses and discriminative validity and internal consistency (Wehmeyer et al., 1998). Internal consistency reliability was measured by coefficient alpha of 0.90 for the scales as a whole, 0.90 for the autonomy domain, 0.73 for psychological empowerment, and 0.62 for self-realization (Wehmeyer et al., 2000).

Self-Directed Search (SDS)

Holland's (1985) *Self-Directed Search (SDS)* was used to measure the person-job congruency, or the fit between an individual's abilities, skills, and interest with the job requirements (Roessler, 2002; Roessler & Rumrill, 1998). Person-job (P-J) fit research shows consistent significant findings with respect to work-related outcomes (Holland, 1997). The *SDS* is a vocational/occupational – interest inventory assisting individuals to choose careers best matching their self-report skills and interests (Holland, 1985a). The *SDS* uses two response choices like (*L*) or dislike (*D*) to identify participants' interests in various job tasks and activities. To identify individual skills participants are asked to mark yes (*Y*) for skills they do well and no (*N*) for skills they do not do well. Responses are summed to yield a 3-letter summary code, designating the individual's interest and skills. Then, using the *SDS*, Occupations Finder, a 3-letter code of the participant's current job is recorded. The summary code is compared to the occupational code of the job that the participant employed at. The degree of P-J congruency is obtained based on a score that is assigned based on how closely the individual's interest and skills codes match their current job/occupational code. The score range is between 0 and 3. A score of 3 is given for exact matches (all three letters match); a score of 2 is given when two of the three letters match; a score of 1 is given when only one of the three letters match; and a score of 0 for no match (none of the 3 letters match). Comprehensive data support the construct validity of the *SDS* scales, which have an average internal consistency of .88.

Procedure

The procedure discusses the data collection processes, data analysis procedure and limitations to the study.

Data Collection

Data Collection discusses site selection and administration of the instruments.

Site selection. A pre-notice letter or email was sent to 8-10 directors of SE agencies in South Florida, explaining the purpose of the study and outlining the process and time allocated for obtaining the data needed from each agency, individuals with MR, and their supervisors or job coaches. Seven business days after the pre-notice was sent, an appointment with the director of the supported employment agency was arranged to further explain the purpose of the study and its benefits to the agency and workers and to answer questions. Appointments to begin the data collection were arranged for the most convenient time for workers and the organization. The data were collected at the agencies rather than the place of employment to avoid disruptions from co-workers, supervisors, and customers that could bias the data. Four to five days were spent at each location or agency.

Instrument administration. The *JIG*, *ARC*, *JOBS: OSD*, and *SDS* measures were administered to and completed by each participant. The instruments were administered to the participants at the supported employment or workforce development agency since most participants worked part-time either in the morning or afternoon and spent their remaining time at the agency in training or counseling programs. All participants were informed about the purpose and nature of the research. They were told that participation was voluntary and that confidentiality would be maintained (e.g., participants were identified by a code number; responses of the individuals would not be known to anyone who evaluates them).

Since all four measures were designed for individual or group administration, the instruments were administered to small groups of 3 to 4 participants. Questions were read orally to each group. For those individuals unable to participate in group administration due to specific disabilities that require more individualized explanation of questions, instruments were administered individually, one-on-one. Participants were allowed to ask for clarification of questions they did not fully understand and the administrator provided assistance. It was estimated to take a total of 60 to 90 minutes for participants to complete all four instruments. To avoid fatigue, the instruments were administered in two separate sessions. The first session consisted of the *JIG* and *ARC* scales. The second session consisted of the *SDS* for P-J congruency and *JOB: OSD*. No more than 48 hours lapsed between the two sessions.

Data Analysis

A series of three multiple regression analyses were performed to test the hypotheses. An alpha level of .05 was used. Multiple regression allows for multiple predictor variables to predict an outcome/criterion variable (Tabachnick & Fidell, 2001). To test the hypotheses, H1, a hierarchical multiple regression analysis was used to determine if WRSB, SD, PJC, JS, and JP predict JR. To test the hypothesis, H2, a hierarchical multiple regression analysis was performed to determine if WRSB, SD, PJC, JS, and JR predict JP. To test the hypothesis, H3, a hierarchical multiple regression analysis or sequential multiple regression, was performed to determine if WRSB, SD, PJC, JP, and JR predict JS. Hierarchical multiple regression helps to determine which set of variables is most closely linked to a specific outcome (Cohen, 1988, 1992; Harlow, 2004), allowing researchers to theoretically order variables in specific steps. Hierarchical multiple regression allows assessment of whether a set of variables substantially adds to prediction, over and above one or more other variables already in the analysis (Cohen, Cohen,

West, & Aiken, 2003). This hierarchical procedure is an alternative to comparing betas for purposes of assessing the importance of the predictor variables.

Limitations

This section identifies limitations of this study. One limitation is that the participants were in a supported employment environment. Those placed in supported employment are generally prescreened for good job performance and appropriate work-related behaviors. Since all participants were in a supported employment environment, a type II error could have occurred, rejecting the null hypothesis when it should have been accepted. Future research should include employees in a natural support setting to verify the results. Looking at the study's variables in two different environments, natural support and supported employment, could ascertain different results.

A second limitation is that as working conditions change over time and the longer an individual with MR is employed on a job, he or she may become less satisfied with the job, but retain employment for other reasons such as financial security. This may influence the JS-JR relationship.

Summary

Chapter 3 detailed the research processes including the research design including, sampling and population, instruments used, and procedures for data collection and analysis. Hierarchical multiple regression analyses were used to determine the percentage of the predictor variables contribution to the total variance of the selected criterion variables (Tabachnick & Fidell, 2001) of JR, JP, and JS. Chapter 4 presents the findings of the study, and Chapter 5 concludes the study with a summary, implications, and recommendations.

CHAPTER IV

RESULTS

This chapter presents data verification, descriptive statistics and intercorrelations, examinations of assumptions, and multiple regression analyses. Three multiple regression equations were used to test the hypothesized model and to identify the important predictors of job retention (JR), job performance (JP), and job satisfaction (JS) in individuals with mental retardation (MR). Prediction methods, such as multiple regression, are helpful in determining which set of variables, or predictors, are most closely linked to a specific outcome (Green, 1991), or criterion.

Data Verification

Following data entry, checking for missing values and outliers took place. Following are the results of this procedure.

Missing Data

Two missing values of the job satisfaction (JS) scale were replaced by the mean for all cases (Green, 1991). Four questionnaires were excluded altogether due to substantial missing data or participant drop out. Missing data was most frequently the result of a failure to answer all questions on the specific questionnaires.

Outliers

Tests were run in SPSS, version 10, to identify outliers. Outliers can seriously bias the results by pulling or pushing the regression line in a particular direction, thus leading to biased regression coefficients. Two cases with extremely low z scores on SD , more than 3 standard deviations from the mean, were found to be univariate outliers and deleted. Thus, from the original sample of 100 participants, 94 were included in the analysis.

Descriptive Statistics and Intercorrelations

Table 1 reports the means, standard deviations, and intercorrelations of the study variables.

Table 1

Means, Standard Deviations and Intercorrelations Among Variables (N=94)

Variables	M	SD	1. JR	2. JP	3. JS	4.WRSB	5. PJC	6. SD
1. Job retentions	27.40	28.25	--					
2. Job performance	81.66	8.81	.444**	--				
3. Job satisfaction	29.07	6.03	.428**	.380**	--			
4. Work-related bh.	56.10	5.74	.423**	.963**	.324**	--		
5. Person-Job cong.	1.86	0.74	.275**	.556**	.228**	.564**	--	
6. Self-determin.	96.63	15.87	.494**	.604**	.460**	.575**	.515**	--

Note. * $p < .05$. ** $p < .01$.

The correlational analysis shows that all 15 correlations were statistically significant at the .05 level of significance. Correlations coefficients of .10, .30, and .50 are interpreted as indicating weak, medium, and strong relationships, respectively (Cohen, 1988; Harlow, 2004). All significant correlations (except PJC with JR and JS) were interpreted as indicating medium to strong relationships. The relationship between PJC, JR, and JS were interpreted to have weak relationships.

Examining Assumptions

Assumptions about the data used in multiple linear regression techniques concerning multicollinearity, normality, linearity, and homoscedasticity were examined. Violations of these

assumptions may make inferences drawn from the results of multiple linear regression procedures untrustworthy.

Multicollinearity

Multicollinearity occurs when variables are so highly correlated with each other that it is difficult to obtain reliable estimates of their individual regression coefficients (Cohen & Cohen, 1983). When two variables are highly correlated, they are basically measuring the same phenomenon or construct. To avoid multicollinearity, correlation between predictor variables greater than .90 should be removed or combined (Green, 1991). High inter-correlations of predictors increase the standard error of the beta coefficients and make assessment of the unique role of each predictor variable difficult or impossible (Green & Salkind, 2005; Tabachnick & Fidell, 2001). Evaluations of multicollinearity among the data obtained in this study revealed a correlation of .95 between the independent variables WRSB and JP. This multicollinearity may be due to the work related behaviors being performance driven. Thus, WRSB and JP were combined in one variable and referred to as job performance (JP). Table 2 presents the correlation among variables with the combination variable – JP. All 11 correlations were significant at $p < .05$, but none reached a value of .90 or more or -.90 or less.

Table 2

Intercorrelations Among Variables After Combining WRSB and JP (N = 94)

Variables	1. JR	2. JP	3. JS	5. PJC	6. SD
1. Job retentions	--				
2. Job performance	.416**	--			
3. Job satisfaction	.428**	.324**	--		
4. Person-Job congruency	.275**	.533**	.228**	--	
5. Self-determination	.494**	.579**	.460**	.515**	--

Note. * $p < .05$ ** $p < .01$.

Normality

Normality assumes that the residuals (predicted minus observed values) are normally distributed (Cohen & Cohen, 1983). Normality checks for skewness, kurtosis, and bivariate plots. If the multivariate normality assumption is met, the only type of statistical relationship that can exist between variables is a linear one (Green & Salkind, 2005). A histogram showed that the skewness and kurtosis were normally distributed, thus there was no violation of normality.

Linearity

The assumption of linearity is evident in the name multiple linear regression, and it is assumed that the relationship between the independent and dependent variables is linear. In practice, this assumption can virtually never be confirmed; fortunately, multiple regression procedures are not greatly affected by minor deviations from this assumption. Although, it is best, as a rule, to look at bivariate scatterplots of the variables of interest (Cohen & Cohen, 1983). Bivariate scatterplots were checked to verify that a relatively straight line versus a curved line occurred (Green, 1991). Regression analysis is a linear procedure. To the extent nonlinear relationships are present, R^2 s underestimate the variance explained overall and the betas

underestimate the importance of the variables involved in the non-linear relationship. The various bivariate scatterplots formed relatively straight lines, thus there was no violation of linearity.

Homoscedasticity

Homoscedasticity is the assumption that the variability in scores for one variable is roughly the same at all values of the other variable, which is related to normality. When normality is not met, variables are not homoscedastic (Cohen & Cohen, 1983; Green 1991). Bivariate scatterplots were examined to check for an oval shape versus a cone or funnel shape to examine the homoscedasticity and assure that the variance of residual error was constant for all values of the predictor variables. Lack of homoscedasticity may mean (a) there is an interaction effect between a measured independent variable and an unmeasured independent variable not in the model or (b) some independent variables are skewed while others are not (Green & Salkind, 2005). Moderate violations of homoscedasticity have only minor impact on regression estimates (Green & Salkind, 2005). An oval shape was prevalent in the bivariate scatter plots and thus, there was no violation of homoscedasticity.

Multiple Regression Analyses

Three multiple regression analyses were used to test the hypothesized model. Multiple regression establishes if a set of predictor variables explains a proportion of the variance in a criterion variable at a significant level (Green & Salkind, 2005). First, all the predictor variables were entered together into the analysis to determine whether each model accounted for more unique variance. When this was found to be the case, hierarchical regression analyses were performed to further identify the most important predictors of JR, JP, and JS in adult workers with MR (Cohen et al., 2003).

First, each regression analysis was examined for statistical significance through an *F*-test. The *F*-test examines whether the degree of association of two or more predictors are related to the criterion and expressed in the correlation coefficient, *R*. If the correlation coefficient (*R*) is significantly greater than zero the null hypothesis is rejected and the alternative hypothesis retained (Cohen et al., 2003). The multiple regression equation is $y = b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + c$, where *y* is the estimated criterion and *c* is the constant (which includes the error term).

Second, to interpret the strength of the relationships of the significant variables, the square of the correlation or effect size (R^2) were analyzed. R^2 gives the proportion of the criterion variance that is accounted for by its linear relationship with the predictor (Cohen et al., 2003). Effect size (ES) is the multiple correlation (R^2) indices used to assess the overall effect of the predictors on the criterion variable. ES provides an indication of the magnitude of the findings and evaluates proportions of shared variance (Cohen, 1992). Multiplying R^2 by 100 allows interpretations of R^2 as a percentage or degree of criterion variance accounted for by a linear combination of predictor variables.

Third, significance tests for individual regression Beta weights (β) were conducted to determine which of the predictor variables (*X*) significantly predicts the criterion or outcome variable (*Y*) (Cohen et al., 2003). The standardized regression coefficients, β (Beta weights), represent the amount the criterion variable (*Y*) changes when the corresponding predictor changes one unit while other predictors are held constant. The unique variance accounted for by each predictor variable can also be established through a hierarchical regression (Green, 1991). A hierarchical regression analysis was performed to further confirm the results.

Hypothesis One – Regression Analysis One

H1 stated that in working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JS would account for a significant amount of variance in the dependent variable, JR. Due to multicollinearity between WRSB and JP; these variables were combined to form one variable, JP. To test H1, two multiple regression analyses were conducted to evaluate how well the various measures (PJC, SD, JP, and JS) were related to the criterion variable JR.

Entering all variables simultaneously, the linear combination predictor measure was significantly related to job retention, $F(4, 89) = 10.295, p < .05$. The model was considered significantly better than would be expected by chance, and there was a linear relationship of Y to the predictor variables. Thus, the null hypothesis was rejected and the alternative hypothesis was retained. The multiple correlation coefficient (R) was .562, and R^2 , or effect size, was .31, indicating that approximately 31% of the variance of job retention in the sample could be accounted for by the linear combination of the predictor variables, PJC, SD, JP, and JS.

Table 3 presents indices to indicate the relative strength of the individual predictors by examining the partial correlations, R , R^2 , Adjusted R^2 , and the change in R^2 . All the bivariate correlations between the predictor measures (JP, SD, PJC, and JS) and the job retention (JR) measure were positive as expected. The relative strength of the individual predictor variable in the model was identified by examining the beta weights. Two of the four work measures (JS and SD) were statistically significant at .05 ($p < .05$). These predictors alone accounted for 28% of the variance of the job retention scale in this full model.

Since the previous regression analysis reported that a certain amount of the variance of the dependent variable job retention could be accounted for by a linear combination of a set of predictor variables and to further test the strength of the predictors, a hierarchical regression was

used. In the sample, it could be concluded that SD is the most important predictor of JR and accounted for 24% of the variance of the job retention scale. JS accounted for 5% of the variance; PJC and JP were not significant and together accounted for 2% of the variance.

Table 3

Partial Correlations and Hierarchical Regression with Job Retention as the Criterion

Variables	Sig	Partial Correlations	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	<i>R</i> ² Change
SD	.000	.28**	.494	.244	.236	.244
JS	.012	.25**	.544	.296	.280	.051
JP	.107	.17	.562	.315	.293	.020
PJC	.789	.02	.562	.316	.286	.001

**p* < .05, ** *p* < .01

On the basis of these correlational analyses, it was concluded that the only useful predictors of job retention of adult workers with MR were SD and JS.

Hypothesis Two – Regression Analysis Two

H2 stated that in working adults with MR, a linear combination of the variables WRSB, PJC, SD, JS, and JR would account for a significant amount of variance of the dependent variable, JP. To test H2, a multiple regression analysis was conducted to evaluate how well the various measures (PJC, SD, JS, and JR) related to the criterion variable JP.

Entering all variables simultaneously, the linear combination predictor measure was significantly related to JP, $F(4, 89) = 16.881, p < .05$. The model was considered significantly better than would be expected by chance, and there was a linear relationship of *Y* to the predictor variables. Thus, the null hypothesis was rejected and the alternative hypothesis was retained. The multiple correlation coefficient (*R*) was .657, and *R*², or effect size, was .431, indicating that

approximately 43% of the variance of JP in the sample could be accounted for by the linear combination of the predictor variables PJC, SD, JS, and JR.

Table 4 presents indices to indicate the relative strength of the individual predictors by examining the partial correlations, R , R^2 , adjusted R^2 , and the change in R^2 . All the bivariate correlations between the predictor measures (SD, PJC, JS, and JR) and the job performance measure were positive as expected. Two of the four work measures (SD and PJC) were statistically significant at .05 ($p < .05$). On the basis of these correlational analyses, it was concluded that the only useful predictors of JP of adult workers with mental retardation (MR) were SD and PJC. These predictors alone accounted for 41% of the variance of the job performance scale in this model.

Since the previous model reported that a certain amount of the variance of the dependent variable JP could be accounted for by a linear combination of a set of predictor variables and to further test the strength of the predictors, a hierarchical regression analysis was performed. In the sample, it was concluded that SD was the most important predictor of JP and accounted for 33.5% of the variance of the job performance scale. PJC accounted for 7.5% of the variance. JR and JS were not significant and together accounted for only 2% of the variance.

Table 4

Partial Correlations and Hierarchical Regression with Job Performance as the

Criterion

Variables	Sig.	Partial Correlations	R	R^2	Adjusted R^2	R^2 Change
SD	.000	.30**	.579	.335	.328	.335
PJC	.001	.34**	.640	.410	.397	.075
JR	.077	.17	.656	.430	.411	.020
JS	.686	.04	.657	.431	.406	.001

* $p < .05$, ** $p < .01$

On the basis of these correlational analyses, it was concluded that the only useful predictors for predicting job performance of adult workers with MR were SD and PJC.

Hypothesis Three – Regression Analysis Three

H3 stated that in working adults with MR, a linear combination of the variables WRSB, PJC, SD, JP, and JR would account for a significant amount of variance in the dependent variable, JS. To test H3, two multiple regression analyses were conducted to evaluate how well the various measures (SD, PJC, JR, and JP) were related to the criterion variable, job satisfaction (JS).

Entering all variables simultaneously, the linear combination of predictor measures was significantly related to JS, $F(4, 89) = 8.085, p < .05$. The regression analysis was considered significantly better than would be expected by chance, and there was a linear relationship of Y to the predictor variables. Thus, the null hypothesis was rejected and the alternative hypothesis was retained. The multiple correlation coefficient (R) was .516, and R^2 , or effect size, was .267, indicating that approximately 27% of the variance of JS in the sample could be accounted for by the linear combination of the predictor variables, SD, PJC, JP, and JR.

Table 5 presents indices to indicate the relative strength of the individual predictors by examining the partial correlations, R , R^2 , Adjusted R^2 , and the change in R^2 . All the bivariate correlations between the predictor measures (SD, PJC, JP, and JR) and the job satisfaction (JS) measure were positive as expected. Two of the four work measures (SD and JR) were statistically significant at .05 ($p < .05$). These predictors alone accounted for 26% of the variance of the job satisfaction scale in this model.

Since the previous model reported that a certain amount of the variance of the dependent variable job performance could be accounted for by a linear combination of a set of predictor

variables and to further test the strength of the predictors, a hierarchical regression analysis was used to assess whether specific variables substantially add to the strength of prediction. In the sample, it could be concluded that SD was the most important predictor of JS and accounted for 21% of the variance of the job satisfaction scale. JR accounted for 5% of the variance. PJC and JP were not significant and together accounted for less than 1% of the variance.

Table 5

Partial Correlations and Hierarchical Regression with Job Satisfaction as the Criterion

Variables	Sig.	Partial Correlations	R	R ²	Adjusted R ²	R ² Change
SD	.00	.26**	.460	.211	.203	.211
JR	.01	.25**	.515	.265	.249	.054
JP	.64	.04	.515	.266	.241	.001
PJC	.85	.00	.516	.267	.232	.001

* $p < .05$, ** $p < .01$

On the basis of these correlational analyses, it was concluded that the only useful predictors of job satisfaction of adult workers with MR were SD and JR.

Summary

These results strongly supported that SD was a major predictor variable in all three hypotheses. SD and JS were strong predictors of JR. SD and PJC were strong predictors of JP. SD and JR were strong predictors of JS. The magnitude of effect demonstrated by these findings suggests that SD had a strong effect on JR, JS, and JP, based on Cohen's (1988) criteria for large effect size. On the other hand, it was concluded that there was no significant relationship between PJC, JP, with JR. There was no significant relationship between JS, JR, with JP. There was no significant relationship between PJC, JP with JS. Chapter 5 discusses the results and implications of these findings for both theory and practice.

CHAPTER V

DISCUSSION

Chapter 5 provides a brief summary of the study, followed by a discussion of insights based on the study's findings. Implications and the limitations leading to future research concerning adult workers with MR are presented.

Summary

Job retention for individuals with MR is a critical component in the efforts to assist them to move from dependency to self-sufficiency (Rusch, 1990). Work and job retention play a central role in adult life, crucially affecting self-concept and wellness. Involvement of a person with MR in the mainstream labor force fulfills both individual and societal expectations (Super, 1990). Employment statistics, whether they address the overall low employment rate of people with MR or their ability to stay employed over time, document the need for more intensive job retention efforts (Roessler, 2002). Government and state initiatives alone cannot solve the employment challenges of many people with MR. Rehabilitation providers and HR professionals need to increase the effectiveness of placement and job retention services (Gilbride et al., 2003). This requires a better understanding of the relationship between personal and work characteristics of working adults with MR and their ability to remain employed. It was the intent of the study to test a proposed job retention model. This model could offer rehabilitation and HR professionals job retention strategies and a useful structure for understanding and implementing job retention interventions for people with MR.

The proposed job retention model (see Figure 8) suggested that if adult workers with MR are allowed to make their own decisions (self-determination; Wehmeyer & Palmer, 2003) and work at jobs that are congruent with their interests and abilities (person-job congruency; Holland,

1985a), they would have high job satisfaction, good job performance, and work-related behaviors (Rosenberg & Brady, 2000), and long-term employment (job retention). Furthermore high job satisfaction in individuals with MR would predict job performance and job retention (Mueser et al., 2001). High job performance would predict job satisfaction and job retention (Brady & Rosenberg, 2002). Job retention would continue to predict high levels of job satisfaction and job performance, sustaining a circular performance improvement/job retention model.

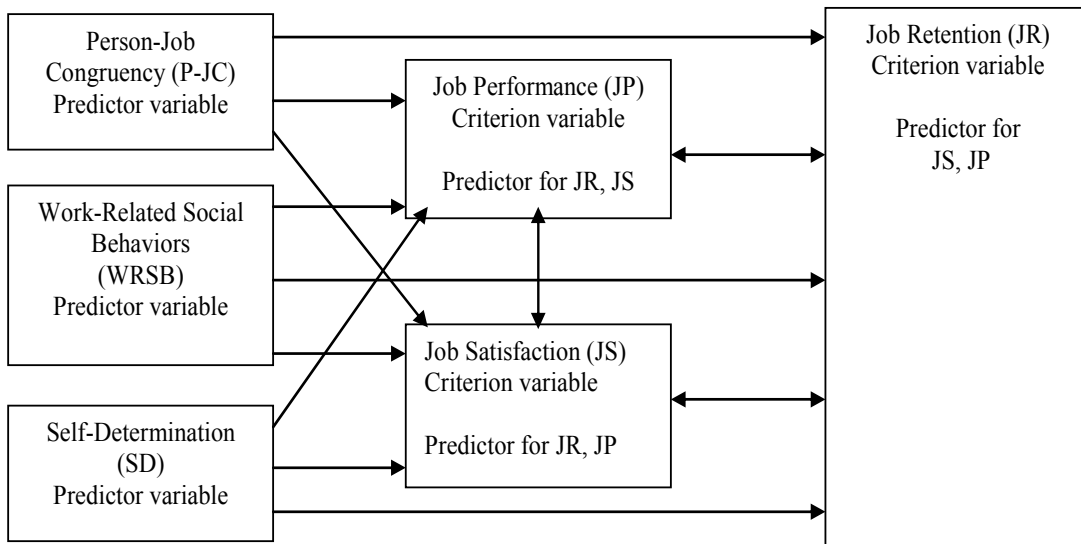


Figure 8. A hypothesized model of job retention for workers with MR.

A survey test battery of standardized assessment instruments were used to investigate the degree to which work-related competencies are related to JR, JS, and JP among workers with mental retardation. To examine the relationship of variables, rationales were provided based on the literature and three specific hypotheses were developed. Multiple regression analyses were performed to analyze significant relationships (Tabachnick & Fidell, 2001). Beta weights and hierarchical multiple regression analysis were used to determine the percentage of the predictor

variables contribution to the total variance of the criterion variables - JR, JP, and JS (Cohen, 1992; Tabachnick & Fidell, 2001).

The results show that SD was a strong predictor of all 3 criterion variables or work outcomes - JR, JS, and JP. Furthermore, there was a predictive relationship between JS and JR and results showed that PJC was a predictor of JP. An interesting finding was that there was no significant relationship between JR and JP or between JP and JS. The results also showed no significant relationship between PJC and JS.

Discussions of the Results

The purpose of the study was to test hypothesized job retention (JR) model for adult workers with mental retardation by examining the predictive relationships between such factors as self-determination (SD), person-job congruency (PJC), job performance (JP), job satisfaction (JS), and job retention (JR).

Summary of Findings from Testing the Hypothesized Model

The findings of the three multiple regression analyses confirmed that not all the variables in the hypothesized JR model were statistically significant and the overall model fit was not fully satisfactory. Findings consistent and inconsistent with the hypothesized JR model lead to a revised model.

Findings that support the hypothesized JR model. Consistent with the hypothesized JR model, JS and SD were the only predictors of JR; SD and PJC were the only predictors of JP; JR and SD were the only predictors of JS (see Figure 9).

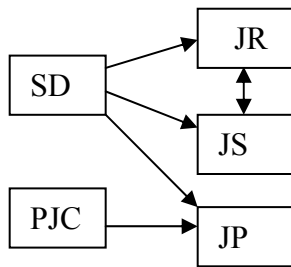


Figure 9. An illustrated summary of the study's findings.

Findings Inconsistent with the Hypothesized JR Model. There was no significant relationship between JR and JP or between JP and JS, which is inconsistent with the hypothesized model. The results also showed no significant relationship between PJC and JS or PJC and JR, which suggests a limited fit between the hypothesized model and the study's findings. To improve the overall model fit, the model was modified by eliminating direct relationships between JR and JP, JP and JS, PCJ and JS, and PJC and JR as illustrated in Figure 9.

Although only two of the study variables (SD and JS) were significant predictors of JR, SD revealed a unique and strong predictive capability for all three work outcomes (JR, JP, and JS). Conclusions and interpretations drawn from the results of this study are discussed by each criterion variable or work outcome, JR, JP, and JS. Since SD has been identified as an important predictor of JR, JP, and JS, a discussion of SD will follow.

Predictors of Job Retention

As expected, and consistent with the hypothesized model, H1 supported the existence of a positive relationship between SD, JS, and JR of adult workers with MR. SD accounted for most of the variance, 24%, and is the major predictor of JR. Although significant, JS accounted for only 5% of the variance, and the correlations were low to moderate. This indicates that JS was only a small part of the influence on JR in workers with MR (see figure 10). PJC and JP were not significant and together accounted for 2% of the variance.

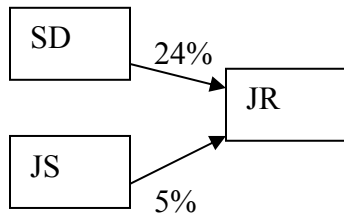


Figure 10. The conclusion of H1 – predictors of job retention.

SD – JR relationship. The significant relationship between SD and JR adds to the current body of knowledge around SD and positive outcomes for young adults with MR transitioning into community life (Wehmeyer, 1996b; Wehmeyer, Lattin, & Agran, 2001). Individuals who possess high self-determination are more independent and more likely to find competitive employment (Wehmeyer & Palmer, 2003). These individuals are significantly more likely to be working for higher wages and receive more company benefits (Wehmeyer & Schwartz, 1997), which leads to longer job retention and financial independence. These individuals are more likely to maintain community-based work and live in independent environments (Wehmeyer & Bolding, 2001; Wehmeyer, Agran, & Hughes, 2000). Successful job retention helps people with MR establish social relationships, develop self-confidence, and further self-determination skills, therefore improving their quality of life (Roessler & Rubin, 1998).

JS – JR relationship. The significant positive relationship between JS and JR supports the hypothesized JR model and Roessler’s (2002) 3M Job Retention Model, which suggests that individuals with disabilities who are satisfied with their job and their work environment are employed longer. Satisfaction occurs when the job provides activities that reinforce personal preferences. Job satisfaction refers to the degree to which people like their jobs (Spector, 1997) and the feelings about their job or job experiences in relation to previous experiences, current expectations, or available alternatives (Balzer et al., 2000). Poor job satisfaction leads to job loss (Roessler & Rumrill, 1998).

PJC - JR and JP - JR relationships. Results indicated that both PJC and JP failed to demonstrate significant predictive relationships with JR. These results are inconsistent with the hypothesized JR model's prediction and with Roessler's (2002) 3M Job Retention Model. The 3M Job Retention Model suggests that the appropriate person-job match is a prerequisite to improving job retention and performance outcomes (Roessler, 2002). The inconsistency may be because supported employment is a controlled environment where workers with MR are placed on the job if they perform well and have good work related behaviors regardless of their interest in the job (PJC) and work environment. Therefore, whether people are employed 3 or 36 months, they have good work performance and work behaviors. Thus, in a supported employment environment the JP-JR and the PJC-JR relationships are difficult to measure. Further research is needed to understand if person-job fit is related to levels of job satisfaction and job tenure and if new work behaviors and skills relate to improved levels of job satisfaction and tenure (Roessler, 2002).

Predictors of Job Performance

In the second regression analysis JP was the criterion variable. Consistent with the hypothesized model, SD and PJC were significant and positive predictors of JP in adult workers with MR. SD was the strongest predictor of JP and accounted for the most variance, 33.5%. Although PJC was significant, it accounted for only a small portion of the variance 7.5% (see Figure 11). JR and JS were not significant and together accounted for only 2% of the variance.

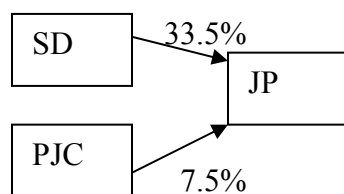


Figure 11. The conclusion of H2 – predictors of job performance.

SD – JP relationship. The significant positive relationship between SD and JP adds to the current body of knowledge around SD and positive outcomes for working adults with MR. Workers who were more self-determined performed better on the job (Brady & Rosenberg, 2002; Wehmeyer & Palmer, 2003) and were more independent (Wehmeyer & Palmer, 2003). Self-determination empowers individuals to plan and make choices about their careers, work, and life (Biklen, 1988; Wehmeyer et al., 1998). Enhanced self-determination of adults with MR moves these individuals to community-based work and independent living environments (Stancliffe et al., 2000; Wehmeyer & Bolding, 2001).

PJC – JP relationship. The significant relationship between PJC and JP further confirms Roessler's (2002) 3M Model and Leach (2002) suggestions that careful job match or person-job congruency results in good job performance. Additionally, proper placement, support, and careful job match that take into account individual interests, skills, and abilities result in good job performance (Rosenberg & Brady, 2001). With proper job match and support, workers with MR perform their jobs equal to or better than non-disabled workers at entry-level positions (Rosenberg & Brady, 2001).

JS – JP relationship. Results indicated that JS failed to demonstrate significant predictive relationship with JP. This result contrasts with Roessler's (2002) 3M Model but is consistent with research in non-disabled populations where no relationship between JP-JS has been found (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993). Thus, this study supports the research on the workers without MR in that JP is not related to JS and vice versa (Iaffaldano & Muchinsky, 1985; Tett & Meyer, 1993).

Predictors of Job Satisfaction

In the third multiple regression analysis, JS was the criterion variable. Consistent with the hypothesized job retention model, SD and JR were significant and positive predictors of JS. SD accounted for most of the variance in JS (21%), but JR accounted for only 5% of the variance (see Figure 12). PJC and JP were not significant and together accounted for less than 1% of the variance.

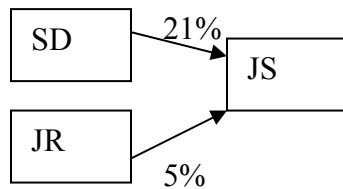


Figure 12. The conclusion of H3- predictors of job satisfaction.

SD – JS relationship. The SD- JS relationship is consistent with Roessler’s (2002) 3M Model and Ironson and Smith (1981). When individuals with MR capitalize on their self-determination, they are able to solve unpredictable problems (Ironson & Smith, 1981). In the 3M Model (Roessler, 2002), the mastery component involves workers’ abilities to adjust to inevitable and unpredictable problems on the job. Resolving unexpected problems on the job requires self-determination skills to define problems accurately, generate feasible options, and implement the steps required to solve the problem. This self-determination skill of problem solving promotes job satisfaction as well as job retention (Ironson & Smith, 1981).

PJC – JS relationship. Results indicated that PJC failed to demonstrate a significant predictive relationship with JS that is inconsistent with the literature and the hypothesized job retention model. Roessler and Rubin (1998) purport a high correlation between job match or person-job congruency and job satisfaction and quality of life satisfaction. One possible explanation for this inconsistency might be internal motivation of individuals with MR and their

aim to please and do a good job no matter what the job is (Rosenberg & Brady, 2000). Additionally, the inconsistency may also be because supported employment is a controlled environment where workers with MR are placed on the job regardless of their interests in the job (PJC). Thus in a supported employment environment, the PJC-JS relationship is difficult to measure. Roessler (2002) suggests further research is needed to understand if person-job fit is related to levels of job satisfaction. Since job satisfaction has also been associated with life satisfaction and mental and physical health (Balzar et al., 2000; Spector, 1997), improved satisfaction has become an important outcome of work

Self-Determination – The Main Predictor of Work Outcomes

Given that SD is the main predictor variable of our hypothesized model it is now discussed in detail. Self-determination theory (SDT; Deci, 1992) is a general theory of human motivation concerned with the development and functioning of personality within social contexts. The theory focuses on the degree to which human behaviors are volitional or self-determined or the degree to which people endorse their actions at the highest level of reflection by engaging in the actions with a full sense of choice (Ryan & Deci, 2000). “To be self-determining is to engage in an activity with a full sense of wanting, choosing, and personal endorsement” (Deci, 1992, p. 44).

Self-determination is viewed as a fundamental human right to govern or direct one's life without unnecessary interference from others, and the focus on promoting self-determination in education has certainly been influenced by this empowerment focus (Deci, 1992). Documenting the impact of self-determination on lives of individuals with disabilities helps to focus resources on this effort and to better understand how much self-determination contributes to educational

and work goals to increase self-sufficiency, autonomy, and valued adult outcomes like employment, community integration, or independent living.

Opportunities to learn and practice skills related to self-determination for individuals with disabilities are often limited because their intellectual capacity is underestimated by their co-workers, supervisors, and parents (Wehmeyer, Agran, & Hughes, 2000). While there is no doubt that intellectual ability contributes to one's capacity to become self-determined, intelligence level does not account for differences in self-determination (Wehmeyer & Bolding, 2001; Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997). Levels of self-determination, autonomy, and life satisfaction, and opportunities to make choices depend on the type of environment: (a) community-based (e.g., independent living or competitive employment), (b) community-based congregate (e.g., group home or sheltered employment), and (c) non-community based congregate (e.g., institution or work activity program; Wehmeyer & Bolding, 2001). Persons similar in mean age and mean IQ scores have more adaptive levels on each measure if they live or work in non-congregate community-based settings (Wehmeyer & Bolding, 2001). Multiple variables that go beyond intelligence test scores should be considered to examine successful outcomes, including self-determination, for individuals with disabilities.

Self-Determination Theory (Deci, 1992) is based on the assumption that people are active organisms, with innate tendencies toward psychological growth and development, who strive to master ongoing challenges and to integrate their experiences into a coherent sense of self. These natural human tendencies do not operate automatically, but require ongoing supports from the social, educational, and work environment to function effectively. Each of these environments can either support or thwart the natural tendencies toward active engagement and psychological growth. Given that this dialectic between the active organism and the environment serves as

basis for SDT's predictions about work behavior, experience, and development (Deci, 1992), it should be a major focus of HRD and rehabilitation professionals. HRD and rehabilitation professionals are in the position to support the natural tendencies for workers with MR to master self-determination skills and professional growth.

Implications for HRD and Vocational Rehabilitation

Contributions made by this study are that self-determination and person-job congruency are particularly relevant in predicting long-term employment, good job performance, and job satisfaction for people with MR. While vocational rehabilitation (VR) services encourage independent behavior and learning self-determination skills (Wehmeyer, 2001), HRD and organizations rarely provide services to address the training and development of these skills in workers with MR. Given similarities in the goals of both VR and HRD, there is a natural fit between these two disciplines regarding workers with MR.

A central goal of HRD professionals is to broaden understanding of the complex activities involved in assisting individuals and organizations to improve their abilities to develop themselves and others in the organization (McLean & McLean, 2001). McLean and McLean (2001) proposed a cross-national definition of human resource development: "Human resource development is any process or activity that, either initially or over the long term, has the potential to develop ... work-based knowledge, expertise, productivity and satisfaction, whether for personal or group/team gain, or for the benefit of an organization, community, nation, or, ultimately, the whole of humanity" (p. 10). HRD is comprised of four primary functions: training and individual development, career development, organizational development, and performance improvement (Gilley & Egglund, 1995). Similarly, vocational rehabilitation focuses on

individual development through skill training and career counseling to enhance work performance and satisfaction.

Vocational rehabilitation (VR) offers individuals with mental or physical disabilities services that are designed to enable participants to attain skills, resources, attitudes, and expectations needed to compete, get, and keep a job. Vocational rehabilitation services prepare qualified applicants to achieve a lifestyle of independence and integration within their workplaces, families and local communities (Wehman, 2001).

Considerable planning and facilitation of individuals with MR participation in the workforce should include coordination between HRD and VR. Based on the data, HRD and VR strategies that encompass person-job congruency and self-determination skill development are related to long-term employment, job satisfaction and good performance of workers with MR. Areas to consider for individual and organizational performance improvement are individual development, including assessment and training, and career development/counseling strategies.

Individual Development

“Individual development refers to the development of new knowledge, skills, and/or improved behaviors that results in performance enhancement and improvement related to one’s current job (training)” (Gilley & Egglund, 1995, p. 15). While both HRD and VR professionals use training to provide new skills and knowledge, prior to training an assessment of current skills and behaviors must be conducted by the HRD or VR professional.

Assessment for individual development. The purpose of assessment is to give employees an opportunity to review the work they have accomplished; to identify and illuminate particularly successful activities, and to identify and define areas that need improvement (Cook & Cripps, 2005). An individual assessment must assess a worker’s weakness as well as his or her

strengths and interests. VR conducts assessments to identify transferable skills and job readiness (Rubin & Roessler, 1995). The ultimate end of the assessment process should be a set of goals that the supervisor and employee mutually agree upon for the subsequent period.

The data identified predictors to important work outcomes for individuals with MR. Validation of the study's revised job retention model developed in this research could lead to the development of a diagnostic tool to assess performance and satisfaction of adult workers with MR. A diagnostic tool developed from the results of this study will allow HRD and rehabilitation professionals to identify the strengths and limitations of workers with MR. This knowledge of the strengths and weakness of a worker with MR will allow for more focused training.

Training. Training includes learning that is provided in order to improve performance on the present job (Gilley & Egglund, 1995) or a method to stimulate individual change (Sredl & Rothwell, 1987). Training is also an experience or a regimen which causes people to acquire new, predetermined behaviors (Laird, 1978). Skill acquisition as a result of formal education, vocational training, or on-the-job training is a significant employability and performance factor (Rubin & Roessler, 1995). While there are many descriptors of the training function the common denominator is that all pertain to a skill or knowledge necessary to do one's current job.

Based on the data and study's results, self-determination is a strong and significant predictor of JR, JP, and JS. Furthermore person-job congruency is a strong predictor of JP. Training that promotes self-determination skills will enhance workers' performance, job satisfaction, and promote their capacity to progress in the job that may enhance the overall organizational performance. HRD and VR professionals that help managers, supervisors, and co-workers teach individuals with MR self-determination strategies and goal-setting skills improve their critical learning skills and community involvement (Gilberts, Agran, Hughes, &

Whemeyer, 2001; Gumpel, Tappe, & Araki, 2000; Woods & Martin, 2004). Given the similarities in goals and objectives of HRD and VR professionals, VR could provide assistance to HRD in both training and career development.

Career Development

Career development is an organized, planned effort comprised of structural activities or processes that advance employees within an organization and result in their optimal utilization (Gilley & Egglund, 1995). Similar to person-job congruency, career development focuses on a strategic effort to create a balance between the individual's interests, values, skills, strengths, abilities, and career aspirations (Gilley & Egglund, 1995; Leibowitz, 1987).

Based on the data and results of this study when individuals with MR that are allowed to be self-determined in their job choice, and select jobs that provide person-job congruency, their performance and job satisfaction is enhanced, ensuring long term employment. Thus, HRD and VR professionals that provide career development strategies that encompass self-determined choices based on person-job congruency may assist workers with MR to perform better and be more satisfied on the job leading to long-term employment.

Career development is frequently equated with upward mobility which is a misconception that should be clarified. Organizational information regarding other opportunities for job movement should be shared and explored with workers with MR, such as job enrichment, job rotation, lateral moves, and realignment moves. VR professionals can assist HRD professionals in designing career development strategies that align a worker with MR in a lateral or realignment move versus termination.

To enhance workers with MR self-determination skills, career development should encompass a career planning sub-component. Career planning refers to individual processes

and intent to meet individual needs (Gutteridge & Otte, 1983). Career planning programs should focus on enhancing the following competencies in workers with MR: self-appraisal and career exploration and career goal setting.

Both individual and career development strategies should encourage a natural supported environment. Natural support is any assistance from supervisors and co-workers that allow people to secure, maintain, and advance in jobs of their choosing. This support corresponds to the typical work routines and social actions of other employees (Rogan, Hangner, & Murphy, 1993). Natural supports lead to two complementary outcomes for individuals with MR, extending individual competence and promoting social acceptance. Extending employee competence requires focus on co-workers teaching individual strategies that they can use to adapt to their roles as employees. Extended individual competence requires the use of procedures that promote acceptable work behaviors and performance. By extending employee competence, employees adapt to changing expectations for performance and increasing responsibilities and opportunities on the job.

Social acceptance is promoted in a work environment where employees with and without disabilities work together. HRD professionals manage social acceptance by teaching workers the skills that enable them to be more self-determined, helping to facilitate more effective interaction with co-workers and the community.

This study provides HRD with the understanding of the importance of developing individuals with MR to be self-determined and allowing them to work at jobs that meet their interests and abilities, leading to better job performance, satisfaction, and longer employment of individuals with MR.

Further Research

The findings from this study support ongoing efforts to enhance self-determination in relation to more positive work outcomes. The next step in evaluating the impact of such efforts, in addition to replication of these findings, would be to examine longer term outcomes for workers with MR who receive specific interventions that promote self-determination, compared with those who do not receive similar work training experiences. Such an examination would provide the causal link between self-determination and positive outcomes missing in this study.

A conceptual limitation of all multiple regression and correlational techniques is that one can only ascertain relationships but never be sure about underlying causal mechanism (Cohen & Cohen, 1983). As this study was correlational in design, the research was unable to ascertain whether the various independent variables caused JR, JP, and JS. For example, there may exist a positive correlation between training/development initiatives and performance, but this does not imply a causal linkage. Training may increase employee motivation that, in turn, causes improved performance. If motivation is the key performance factor, other less costly means can be used to improve employee motivation. Experimental research that examines a cause and effect design will add to the body of knowledge.

This study highlights the importance of SD skills in working adults with MR, which also has implications for adolescents in transition. Self-determination in the transition planning process is the most critical factor for youth with disabilities because youth are so often relegated to the “second seat” in the decision-making process of their own lives (Sitlington, Clark, and Kolstoe, 2000). Many students with disabilities continue to rely heavily on other people who determine how they will live, if and where they will work (Kohler, DeStefano, Wermuth, Grayson, and McGinty, 1994). The inclusion of self-determination instruction infused into

transition curriculum will not only improve educational outcomes, but also enhance skills and abilities needed for adult roles in life. Further research is need on strategies to build SD instruction into transition programs and education.

This study has not taken into consideration a time-lag design. In a time lag design, for example, people born in different years are tested when they reach the same age. This procedure allows the time of testing to be evaluated while holding age constant. Thus, while no differences between ages are examined, the researcher can determine differences due to changes in the environment over time. Future studies may consider a time-lag design.

Conceptions of personality and motivational processes in persons with MR are only loosely related to theoretical models derived from mainstream psychology, virtually none of the available knowledge is based on any sustained systematic study of people with MR (Switzky, 1997). Prior, research on people with MR focused primarily on identifying the cognitive deficits rather than personal characteristics (Switzky, 1997). Despite the evidence that personality and motivational aspects are equally important to positive outcomes for people with MR, the importance of the level of intelligence remains over emphasized (Merighi, Edison, & Zigler, 1990). More research needs to focus on providing evidence that IQ and life success are not as strongly correlated as previously presumed and de-emphasizing the intelligence factor as the dominant determinant of positive outcomes for people with MR.

A useful extension of this research would be a predictive model that includes not only proximal outcomes of job retention, like personal characteristics, but also distal outcomes such as economics and other work related issues (e.g., support). Links between economical factors could be used to inform the proposed job retention model for workers with MR. The literature suggests links between various support strategies, such as natural supports of coworkers, outside

job coach support, vocational support, and job retention. These support strategies could be examined as distal outcome variables of job retention.

Significance of the Findings

SD has shown to predict long-term employment, good job performance, and job satisfaction for people with MR. Employment and successful job placement of individuals with disabilities has personal, economic, organizational, and societal benefits (Grossi & Heward, 1998; Grossi, Schaaf, Steigerwald, & Mank, 2002). Successful work promotes gains in self-esteem, self-confidence, adds meaning to one's life, community tenure and integration, and overall quality of life (Grossi et al., 2002). Work produces the opportunity to contribute toward one's own financial independence, decreasing dependence on support from families and taxpayers (Anthony, 1994; Rosenberg et al., 1991), creating new opportunities for community participation (Griffin et al., 1996). Organizations that include people with disabilities in their diversity programs increase their competitive advantage. This largely untapped segment of the labor pool adds to the variety of viewpoints organizations need to be successful in bringing effective solutions to today's business challenges (Konig & Schalock, 1991). If approached with an open attitude, the results of employing individuals with MR can be mutually beneficial.

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