DISSERTATION

EMPOWERMENT IN ORGANIZATIONS: DIMENSIONS OF THE SUPPORTED EMPLOYMENT MODEL

Submitted by

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WE HEARBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY RICHARD DENNIS SCHLEUSENER ENTITLED EMPOWERMENT IN ORGANIZATIONS: DIMENSIONS OF THE SUPPORTED EMPLOYMENT MODEL BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

EMPOWERMENT IN ORGANIZATIONS: DIMENSIONS OF THE SUPPORTED EMPLOYMENT MODEL

The purpose of this study was to determine the relationship that dimensions of the supported employment model have with the level of empowerment in individuals in large, industrial organizations. Four dimensions of the supported employment model were examined: social skills or self efficacy for teamwork; the level of inclusion in the organization; the level of natural support in the organization; and the readiness for change of individuals in the organization.

A hierarchical regression analysis of the elements of the supported employment model on empowerment of individuals in six different departments showed that readiness for change and self efficacy for teamwork were significant contributors to empowerment. Inclusion was significant in the analysis for only two of the departments surveyed, possibly due to multicollinearity issues with the independent variables of self efficacy for teamwork and readiness for change. Natural supports was not a significant variable in the regression analysis, and that appears to be due to inadequacy of the instrument representing the level of natural support in the organization. Change and inclusion effects on empowerment were unique for specific departments which suggests the potential for a more comprehensive model that predicts the level of individual empowerment

This research has shown that understanding and applying the constructs in the supported employment model offers insights into potential interventions into ways to make organizations more effective. The supported employment model aims to make individuals more effective in the workplace. This research shows that implementation of dimensions of the supported employment model makes organizations more effective.

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Introduction

Today's organizations are faced with many new challenges. New technology has created a rapid pace of change that demands shorter lead times for manufacturing and developing products. Consumer expectations no longer tolerate products that are good enough; rather they expect high quality products that are made with the specific product features consumers desire. The global marketplace has presented new competitors and requires understanding how to develop and deliver products for new customer bases. Employee demographics are changing dramatically which will require understanding dynamic cultural issues in the workplace.

System of Profound Knowledge

Deming (1993) stressed the need for managers of organizations to understand and apply a System of Profound Knowledge as a framework to address these issues. This framework is operationalized by creating an environment that encourages cooperation and learning. With that environment in place, the organization can continuously improve and employees are intrinsically motivated and fulfilled. This creates a system where customers are satisfied so that the organization can realize long term survival (Anderson, Rungtusanatham, & Schroeder, 1994).

Although Anderson et. al.'s operationalized framework for Deming's System of Profound Knowledge does not specifically state it, Deming advocated creating a work

environment that did not blame people for problems but fixed the system in which people work (Boardman, 1994). This notion is supported by a plethora of theoretical research in the organization development literature that identifies the need to create a person-centered, inclusive environment that supports learning and collaboration (Kofman & Senge, 1993; Kohn, 1993; Mueller, 1996; Reich, 1994; Scholtes, 1998; Senge, 1990; Senge, Kleiner, Roberts, Ross & Smith, 1994). In addition, empirical research has demonstrated desirable effects of collaborative work in organizations (Grandzol & Gershon, 1997), and research on job design has examined the organizational structure and culture that support intrinsic motivation and a sense of meaningful work for an organization's members (Hackman & Oldham, 1976; Thomas & Tymon, 1997; Tymon 1988).

Creating organizational systems that lead to fulfilled and empowered employees is a key leverage point in Deming's management philosophy. Empirical research is needed to examine linkages of the operationalized framework of Deming's theory of management (Anderson, et. al., 1994). This would allow an understanding of the theoretical underpinnings of creating such an environment which is critical work for creating competitive organizations. Deming's philosophy of management explores the top down responsibility of management to create an organizational culture to generate desired results. Supported employment examines individual issues that influence the culture and environment of an organization. Therefore, the supported employment model can be used to hypothesize ways to understand and implement Deming's principles of management.

Supported Employment Model

Supported employment is a model of work support designed to facilitate successful entry and retention of people with disabilities to the workforce. This concept, which originated from the special education field, has enjoyed significant growth in the last decade and is viewed as the most effective way for people with disabilities to succeed in competitive work (Wehman & Kregel, 1995). The Association for Persons with Severe Handicaps (TASH) called for employment of people with disabilities that offer integration into regular employment settings, meaningful compensation, personal choice in job selection, ongoing career advancement, individualized and natural supports in the workplace, and equal access to jobs (Wehman & Kregel, 1995). The intent of the supported employment model is to offer these characteristics for people in the workplace.

The principles that define supported employment include competitive wages for significant work, and physically and socially integrated employment opportunities for all people, even those with significant disabilities (West, Kregel, & Revell, 1994). The supported employment model consists of five program components: a community job survey, job match and placement for the individual, job training, follow-up services, and interagency coordination (Rusch & Hughes, 1989). These fundamental components have been in place since the inception of supported employment. Since then, the supported employment model has continuously evolved. Issues such as natural supports and personal choice in selecting career options have received increased focus (Albin, Rhodes, & Mank, 1994; Brooke, Wehman, Inge, & Parent, 1995; Hughes, 1996; Sandow, Olson, & Yan, 1993; Test & Wood, 1996). The process steps in these models offer a methodology to place people with disabilities into competitive work. The construct of

supported employment consists of person centered systems that are consistent with Deming's organizational management philosophy. These systems may offer insights into the components and linkages of Deming's operationalized framework for management.

The Need for the Study

Supported employment research has focused on placing individuals with disabilities into competitive work and not on the organizational effects of using this model. Evidence to support the individual research focus can be found by examining several sources. The Transition Research Institute at Illinois is the headquarters for The National Transition Alliance for Youth with Disabilities Consortium. They maintain a bibliographic database on transition issues. A breakdown of the search for supported employment articles found 76 citations that examined the following issues: models of supported employment (26 entries); natural supports in the workplace (14 entries); policy and program evaluation issues (13 entries); training issues of consumers and professionals (9 entries); cost benefit analyses (8 entries); consumer satisfaction (8 entries); and six miscellaneous entries. The focus of this research is on individual issues and not on organizational impacts of the supported employment model.

Further evidence suggesting that the supported employment research focus is on individual rather than the organizational effects can be seen from a request for proposal from the National Supported Employment Consortium. They are funding projects to examine community based employment change initiatives, identify new supported employment practices, and provide technical assistance to the states based on findings from the study. The consortium is evaluating ten areas of study that all deal with consumer issues and supported employment models. The research on supported

employment has evaluated systems that facilitate job retention, job satisfaction, service satisfaction, participation in the supported employment model, earnings evaluations, support in the workplace, and cost - benefit ratios of program implementation. The focus of this research has not addressed organizational effects.

There are consistent themes between the requirements laid out by the supported employment literature and those identified by Deming's system for management. Empowerment, for example, involves issues of meaning, competence, self determination and ability to impact (Spreitzer, 1995) which are dimensions that are supported with Deming's management philosophy and are facilitated by the supported employment model. The supported employment model advocates building inclusive communities which is consistent with Deming's encouragement to create organizations where people find joy in work. This suggests that elements of the supported employment model may offer support for organizational effectiveness in addition to support in placing individuals in competitive work. The supported employment literature has focused on placing individuals successfully and has not empirically tested the impact of the supported employment model toward organizational effectiveness. Research on organizational constructs that support empowered employees using Deming's theory of management has not considered linkages of the elements prescribed by the synthesis of the supported employment literature.

Problem Statement

The purpose of this study was to determine how qualitative variations in the organizational environment, which are more or less characteristic of well implemented supported employment, affect empowerment of the members of an organization.

This researcher's review of the supported employment research showed a set of dimensions that appear to characterize well implemented supported employment. These elements include self efficacy for teamwork, presence of natural supports in the organization, an inclusive environment for work, and individual capacity for readiness for change.

Variations in empowerment, the dependent variable, was measured using a model of empowerment developed by Thomas and Velthouse (1990). These researchers identified four dimensions of feelings that an individual has about the work that they do which represent their personal sense of empowerment. These four dimensions include feelings of choice, feelings of competence, feelings of meaningfulness, and feelings of progress or impact.

The dimensions identified in the supported employment literature influence organizations in two ways. Presence of natural supports and the level of inclusiveness in the organization are cultural attributes of an entire organization. Self efficacy for teamwork and readiness for change are cultural variables as well, but are measured as individual characteristics and influence organizations as individual components. The underlying model needs to account for these levels of differences when explaining their contribution toward individual empowerment.

The model used in this research measures these dimensions on person i in department j, where i = 1,2, ... , n_j represents each individual sampled in a department in an organization represented by different departments, and j = 1,2, ... ,n represents each of n different departments that were sampled in the study. The model follows:

$$Y_{ij} = \beta_{0j} + \beta_{1j}(I_{ij} - \bar{I}_{\bullet j}) + \beta_{2j}(\overline{NS}_{\bullet j} - \overline{NS}_{\bullet\bullet}) + \beta_{3j}(C_{ij} - \bar{C}_{\bullet j}) + \beta_{4j}(TW_{ij} - \overline{TW}_{\bullet j}) + \varepsilon_{ij}$$

where:

Y_{ij} is the empowerment measured on person i in department j,

β_{0j} is the intercept for department j, where j=1,2,...,7,

β_{1j} is the slope for inclusion for department j,

β_{2j} is the slope for natural supports for department j,

β_{3j} is the slope for readiness for change for department j,

β_{4j} is the slope for self efficacy for teamwork for department j,

I_{ij} is the measured level of inclusion for person i in department j

$\overline{NS}_j$ is the measured level of natural support for persons in department j

C_{ij} is the readiness for change of person i in department j,

TW_{ij} is the level of self efficacy for teamwork for individual i in department j, and

ε_{ij} is the random error attributed to person i in department j.

This research focused on the relationship between individual empowerment and readiness for change, self efficacy toward teamwork, organizational inclusiveness and levels of natural support. Concerns that were specifically examined included which dimensions of organizational culture appeared to have the most influence on individual perceptions of empowerment. Additionally the research examined the most powerful combination of dimensions of organizational culture that affect individual and composite feelings of empowerment.

Significance of the Study

Research on supported employment has focused on the impact on the individual. This study examined the potential of improved organizational performance manifested by a higher level of individual empowerment. If empowerment is shown to be favorably influenced by the supported employment model, advocates of persons with disabilities attempting to access competitive work would have an additional rationale for organizations to adopt the supported employment model.

Definition of Terms

The following list of terms used in this research are defined as:

1. Supported Employment: Supported employment is a construct or process to place people with disabilities into competitive and meaningful work.
2. System of Profound Knowledge: A system of profound knowledge is "... a theory of management that helps individuals learn through the acquisition of process knowledge gained from experience coordinated by theory" (Gitlow, 1994, p. 199). The system consists of four parts: appreciation of a system, understanding variation, theory of knowledge, and psychology of people.
3. Inclusion: Inclusion is "The practice of including individuals in the network of information, contacts, and opportunities" Larkey (1996, p. 300).
4. Natural Supports: Natural supports describe resources and social interactions for individuals in a group that exist naturally, without specific implementation of programs.

5. Empowerment : Empowerment is defined as intrinsic motivation towards work realized in four cognitions or feelings by individuals who are empowered: choice, meaning, impact and competence (Thomas & Velthouse, 1990).
6. Self-Efficacy for Teamwork: This describes a personal belief that an individual can effectively work in groups to support the group in gaining desired results.
7. Readiness for Change: Readiness for change has three dimensions (Hanpachern, 1997): promoting change, participating in change, and resisting change. These dimensions describe the willingness of an individual to accept and participate in change.

Scope and Limitations of the Study

This study is limited to one industrial organization located in Northern Colorado, while the theoretical population is large industrial organizations. This organization manufactures a mature product line, and has experienced frequent restructuring efforts in the last two decades. Empowerment issues may be affected by job security concerns. However, this type of experience is not atypical in many organizations.

Quantitative research can be problematic because of the necessity of narrowly defining the framework where the problem is studied. Deming warned of misinterpretations using analytic studies that make predictions of the future (Boardman, 1994). Not all factors that influence these predictions can be held constant, so inferences made of future behaviors are not always valid. Deming said that "All theories are right, in some world" and George Box said that "All theories are wrong, but some are useful" (Scholtes, 1998, p.31). A quantitative approach does offer insights into potential theories

of how people will operate in organizations, and this method of inquiry can be useful unless and until proven invalid.

This study measured four of the five variables of interest through self report. Potential issues of candidness of the response, correct interpretation of the questionnaire, and personal value systems exist that can affect the measures. Self report was used despite these problems because of the necessity of understanding personal perceptions of people's experiences in organizations.

It should be noted that the hypothesized model is not necessarily exhaustive in identifying all potential variables that would influence well implemented supported employment. The underlying model of the dimensions of supported employment is the researcher's synthesis of critical elements of the model. There are certainly other variables that could be hypothesized with another researcher's review of the supported employment literature.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter is a review of research on supported employment. A model developed from this literature review is shown. Research from organization development literature is also reviewed that undergirds the model hypothesized from the supported employment literature. The model shows a framework of the best practices of supported employment to facilitate successful entry and retention of individuals with disabilities in competitive work. The organization development literature describes how the elements identified in the model create a culture that supports the organization through enhancing individual empowerment. Each of the dimensions of the model are discussed in detail from the paradigm of both research perspectives.

Model

The model shown in Figure 1 is a synthesis of a literature review of supported employment on best practices to support and place people with disabilities into competitive work. The elements highlighted in the literature and shown in the model include personal skills of self efficacy for teamwork (social skills) and capacity to adapt to change, and the organizational culture that has natural supports and an inclusive environment.

The four dimensions shown in the left column of the model are building blocks for the culture of an organization that best supports individuals with disabilities. As the

organization development literature confirms, these building blocks are also supportive of a culture that will drive positive organizational results through individual empowerment. The building blocks for a desired culture are hypothesized to favorably influence the level of personal empowerment.

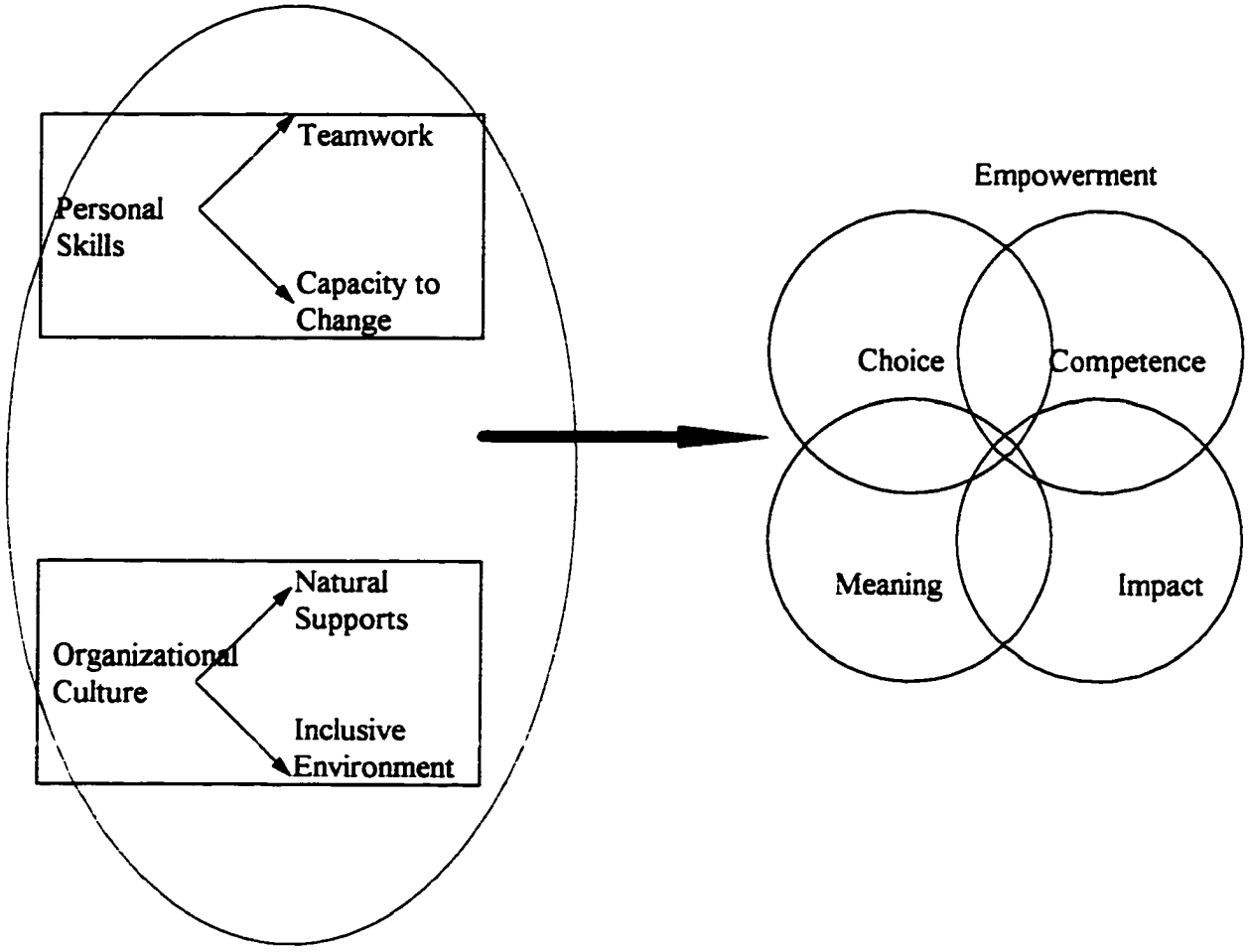

Figure 1. Model of supported employment with hypothesized effects.

Dimensions of Model

Dimension #1: Teamwork (Social Skills)

Definition of Teamwork (Social Skills)

Social skills are valuable for individuals in the supported employment model. Social skills are the ability and willingness to work well with other people. An individual's social skills or self efficacy for teamwork are affected by their personal belief in their ability to work well in a team (Eby & Dobbins, 1997). Individuals with self-efficacy toward teamwork believe that results are dependent on more than just individual effort; they anticipate the team experience to be positive, and their personal needs are met by working in a team.

Because self efficacy for teamwork has been shown to be related to a preference for working in teams (Campion, Medsker, & Higgs, 1993), this specific dimension was selected to measure an individual's preference and ability to work well with others. The construct of social skills is operationalized in this research by self-efficacy for teamwork.

Teamwork in the Supported Employment Literature

The ability to work well with others is a valued asset in any setting where people interact. Social skills improve the quality of work life, and have been shown to be correlated to vocational skills and need to be successfully employed. Hasazi, Collins, and Cobb (1988), and White and Rusch (1983) described general personal skills and attitudes as attributes needed in the workplace. Chadsey-Rusch and Heal (1995) predicted a higher quality of life when there is increased social participation and increased work acceptance. They suggested this is more likely when individuals are able to adapt social skills to the workplace. Wacker, Fromm-Steege, Berg and Flynn (1989) hypothesized that successful

supported employment depends on collateral behavior where collateral behavior was defined as the communication and social skills required to effectively do the work.

Social skills are a prerequisite to valued work. Social skills have been shown to have a positive correlation to vocational skills (White & Rusch, 1983). Rubin (1993) identified social skills as a key component for an individual with a disability to gain successful placement into supported employment programs. Social skills are a necessary competency for the workplace (Test, 1994; Wehman, 1990).

Several strategies have been suggested to develop social skills to be used in the workplace. For supported employment to be successful, it is necessary to analyze and anticipate what the future workplace will look like and identify social skills and behavioral expectations required. In addition, it is necessary to develop strategies for long term behavior, not just for the moment (Rusch & Hughes, 1989).

Teamwork in the Organization Development Literature

Argyris (1996) identified the ability for individuals to make contributions in a group setting as a critical skill.

> "No one man seems to be able to have all the knowledge necessary to make an effective decision. If individual contributions are necessary in group meetings, it is important that a climate be created that does not discourage innovation, risk taking, and honest leveling between managers in their conversations with one another. The value of a group is to maximize individual contributions." (Argyris, 1996, p. 172).

Joiner (1994) highlighted the importance of teamwork when he identified teamwork as one tenet of a threefold strategy in his model for organizational effectiveness. Enabling this climate requires developing teamwork skills which are equivalent to social skills.

New organizations will need cross-functional teams (Lawler, 1994). No one area will possess enough knowledge or expertise to do the work needed of the organization. That will require people to work together and interact effectively so that all needed information and skills can come together to meet the goals of the organization.

Teamwork is a necessary skill set in organizations to enable individuals to work collaboratively. Individual recognition and promotion may undermine organizational effectiveness (Kohn, 1993). An organization that reinforces individual gain over collective gain will not be as effective as an organization that creates systems for collective performance. "Cooperation takes advantage of all the skills represented in a group as well as the mysterious process by which that group becomes more than the sum of its parts." (Kohn, 1986, p. 28).

For organizations to be effective, Bartlett and Ghoshal (1995) suggested that an environment of collaboration needs to replace an environment of compliance, control and constraint. Their ideal organization would exhibit characteristics of support and trust. These characteristics highlight the need for an environment where teamwork has an opportunity to flourish.

Creating an Environment for Optimal Teamwork

Use of dialogue is identified as a key characteristic of effective teams (Bohm, 1980; Issacs, 1993; Kofman & Senge, 1993; Senge, et.al., 1994;). Isaacs (1993) described the process of dialogue as a better way for people to gain insights, work out of their problems, and find creative solutions to long standing issues. Dialogue means to work through instead of tear apart. The way that problems are solved is for people to look at their individual mental models or paradigms and develop a collective framework of

common understanding that can be used to define and solve problems. Dialogue is critical because organizations face complexity no one person can address alone, and current efforts at group thinking often backfire. Dialogue is not an easy process. It requires individuals and groups to take risks and listen when working with each other An environment where teamwork skills are high will facilitate this effort, although not guarantee it.

Beck and Yeager (1996) described seven characteristics necessary to best accommodate and encourage teamwork. These include: (a) leadership, (b) individual contributions, (c) teams that are up and running quickly, (d) focused teams to avoid conflicts, (e) clear expectations and boundaries, (f) accountability that resides in individuals, not teams, (g) and an environment where all team members lead and support each other. They also described situations where teams get into trouble. Teams need to form around a clear purpose and focus on how to accomplish that purpose. Lack of a clear purpose leads to a "storming" stage in the team life cycle.

Supportive environments frame relationships between superiors and subordinates, and also between peers. Focusing on support and trust creates an environment where people work better together (Bartlett & Ghoshal, 1995). Trust is described as a critical component of team characteristics because of the necessity of members of a team taking risks. Without the element of trust, members of a team will not take risks.

Dimension #2: Readiness to Change

Definition of Readiness to Change

Readiness to change has three dimensions (Hanpachern, 1997): promoting change, participating in change, and resisting change. This construct measures the precondition

necessary for people to accept and adapt to change. The literature from both organization development and supported employment shows that the ability to change is a crucial personal skill in successful organizations.

Readiness to Change in the Supported Employment Literature

Transition and change have been highlighted by the literature on people with disabilities because of unique challenges to people with disabilities. It is recognized that an external environment exists where organizations and people are buffeted by transition and change. Transition has been defined by Modell, Furstenberg, and Hershberg (1976) to consist of five elements. These five elements of transition include: (a) the prevalence of the transition as compared to other peers, (b) the timing of the transition, (c) the spread of transition, (d) the age-congruity of individuals undergoing the transition, (e) and integration. Research has shown that people who undergo transitions outside of typical timing tend to have their socioeconomic status unfavorably influenced (Pallas, 1993). Blalock (1988) reviewed several models of adult development and noted the importance of understanding and addressing the cultural impact of transition.

The experience of change has a significant impact on individuals. Pallas (1993) has shown that differences in transition timing and sequencing are culturally sensitive, i.e., the timing of the change itself does not dictate consequences - rather it is the timing as a function of the society in which the individual lives. The lack of support or preparation can cause a role overload (Pallas, 1993). He goes on to note that all people assume roles in their lives and transition from one role into other roles. If individuals are forced to assume too many roles at one time, they will suffer from role overload and be less able to cope with their life experiences.

This suggests the need for an intervention to support people who are in the process of changing from one role to another, i.e., undergoing transition. Mallory (1995) made recommendations for social policy to support those going through transitions. His recommendations suggest that policies be cognizant of theoretical models of transition. Policies should recognize where the individual is in his or her personal life cycle and in his or her family's life cycle. Finally, policies should anticipate transitions that all people go through.

Gilmore and Butterworth (1996) reported results of rehabilitation practices of 94 providers between 1986 and 1991. They found that supported employment increased even though participation in traditional sheltered workshop models remained flat. They highlighted the necessity of systems change to allow for the supported employment model to replace sheltered workshops.

A significant amount of research has been done to understand practices to enable systems change for supported employment (Hasazi, et. al., 1992; Kiernan, & Stark, 1996; Kiernan & Schalock. 1997; Mank, Buckley, Green, VanCovern & Revell, 1992; Murphy & Rogan, 1995; Racino, 1993; Usdane, 1993). Their conclusions were that systems change is a necessary part of developing a viable supported employment model. Implementing systems change requires readiness for change of the individuals in the system.

Pumpian (1997) highlighted the fact that successful placement is often seen as the goal in people with disabilities gaining competitive work. He suggests that a more appropriate goal is to develop training programs so that people can anticipate changing careers, not just gaining original placement. This highlights the need to consider change

when implementing successful supported employment. Both systems change and personal change need to be considered.

Readiness to Change in the Organization Development Literature

Understanding and coping with change has been identified in the organization development literature as a critical need in organizations. Changing demographics, changing markets, new technology, and the emerging global marketplace all require people and organizations to adapt or radically redefine how they will deal with the environment. Environmental change is constant and is one of the components that is creating a crisis in organizations today (Hammer & Champy, 1993). Without the capacity to deal with change adequately organizations become noncompetitive and die. IBM, Kodak, and General Motors are examples of organizations that have struggled with changing environments, have lost market share and are not the dominant forces in the market that they were thirty years ago.

There is a natural resistance to change (Senge, et. al., 1994). Overcoming this resistance from personal and organizational perspectives is difficult and requires attention in any improvement efforts. For organizations to change, the individuals in the organization need the capacity and willingness to be able to change personally. For individuals to change, the right supports and culture need to be in place to enable the transitions that people experience.

Change Models

Change models are characterized by three phases: (a) a gradual awareness of the need for change, (b) the chaos of the actual change or transition, (c) and the commitment to the outcome (Beckhard & Harris, 1977; Bridges, 1980; Buckley & Perkins, 1984;

Scholtes, 1988). These phases are summarized from more detailed models, but are descriptive of both personal and organizational change. Movement through the change cycle is typically sequential but it is possible to experience movement back through the change phases. When individuals or organizations change, they go through an ending phase of an existing paradigm (awareness), to a transition phase where a new approach is considered (chaos), to a beginning phase (outcome) where a new way of doing or understanding is adopted.

The initial phase of change is an awareness or awakening of a need to change. Individuals use a framework of a system of rules and relationships to understand the world. A paradigm is a construct that provides a framework to understand the world. A paradigm shift, the process of changing the framework used to understand the world, is painful and slow (Kuhn, 1970). In his description of the changes in the way that the scientific community conducted their research, Kuhn hypothesized that paradigms will shift only when there is an alternative paradigm to take its place. This was evidenced by his perception that anomalies are ignored until scientists had a new way to explain what they had seen.

Acceptance of change happens slowly. In the process of change, the change initiators are not able to completely communicate their views. "Communication across the revolutionary divide is inevitably partial" (Kuhn, 1970, p. 148). New paradigms become embraced when they are able to solve problems that the old paradigm is unable to solve. The decision to embrace a new paradigm is based more on faith than logic. There is often not adequate evidence that the new paradigm should replace the old.

A principle of change is that it is critical that organizations connect with the outside environment (Fullan, 1993). This is essential because of the need to understand the existing environmental changes and foster the ability to recognize the need for change as well as potential approaches to change.

Change is difficult to initiate because of the inertia involved when trying to get a group of people to change the paradigm they use to view their world. "This process of change can be painful. Many people try to hold on to a treasured belief too long, while others are deflected by every wind that blows. Salvation lies somewhere in between" (Box, 1997, p. 49). Changes are initiated by one or only a few people. Those people are typically people with little experience with the existing framework of doing or understanding, and they have had experiences that cause them to question the existing paradigm. Bohm (1980, p.28) describes the problems with changing one's perceptions: "... truly original discoveries in science and in other fields have generally involved [inquiry into the appropriateness of the question], leading to a perception of their appropriateness, and in this way putting forth of new questions. To do this is often very difficult, as these presuppositions tend to be hidden very deep in the structure of thought".

Myron Tribus (April 4, 1997) described his perception of how an awareness of the need for change is realized. He suggested that individual and organizational needs lead to a belief that it is possible to create a new approach to the needs. "I believe people change only when they are convinced there is no other way for them to go to meet a compelling need."

Beckhard and Harris (1977) developed an analytical model to describe when change is likely to occur as a function of the cost of the change:

$$C=(ABD)>X$$

where

C = change

A = the level of dissatisfaction with the status quo

B = a clear desired state to change to

D = practical first steps toward implementing the change

X = the cost of change.

This model highlights the elements required to produce an awakening in the need to change. There needs to be enough pain in the present circumstance that the pain of changing is worth pursuing.

Substantial change is a painful process. "Change roams somewhere between over-control and chaos" [Fullan, p. 19 in reference to Pascale, 1990]. Ghosal and Bartlett (1996) used the metaphor of a caterpillar changing to a butterfly to describe the process of change. The caterpillar needs to get its legs pulled off and body torn apart before it can emerge as a butterfly. Fullan (1993) suggested that if change is going smoothly, it is a sign that the change is superficial or trivial.

Bridges (1980) described this second phase of the change process as filled with panic, numbness, anger, hostility, depression, withdrawal, speculation and confusion. Buckley and Perkins (1984) suggest that this phase of change is filled with attempts to change the underlying structure, the challenge of the reordering, and carries with it significant evidence of instability.

Change can create crisis in individuals. Maslow's (1991) theory of a hierarchy of needs shows that people drop down the hierarchy when coping with stressful times such as

significant change. In the same way, change can create crisis in organizations. Judge (1994) suggested that organizations have a needs hierarchy much like individuals. When an organization is in crisis, needs are not met, and the organization also drops in the hierarchy of needs.

Change can be precipitated by crisis. However, "...crisis alone is not enough. There must be a basis, though it need not be rational nor ultimately correct, for faith in the particular [paradigm] chosen" (Kuhn, 1970, p. 157). Kuhn painted a picture of change that is not necessarily logical and well thought out.

The end product of change is not always what the change initiator plans. Change to an existing state cannot be dictated. The more complex the change is, the less the change can be forced (Fullan, 1993). Change needs to be a journey rather than a blueprint. The end result of a change effort is not predictable.

Weisbord (1989, p. 255) described his personal experience in consulting with organizations to facilitate change. When he began, he believed in top down, planned change. His experiences did not generate systems change. "I realized that my OD projects always stalled somewhere between the top and bottom...". He concluded change needs to happen at an individual level as well as from the top down.

Wheatley (1992) stressed the futility in attempting to control outcomes of change. Conventional belief systems of organizational behavior believe that organizational behavior is deterministic. In Wheatley's belief this is not true, so knowing where change efforts will lead is impossible. Outcomes cannot be designed and dictated. Chaos theory suggests that small perturbations to a system can have major consequences (Gleick, 1987).

Dimension #3: Natural Supports

Definition of Natural Supports

Nisbet & Hagner (1988, p. 261) first defined natural supports to be "...start[ing] with an examination of the social interactions and supports characteristic of natural work environments ... and augment[ing] the natural processes and interactions within community businesses ..." Mank (1996) noted that the definition of natural supports is continuously evolving because ideas to improve systems to place people with disabilities into competitive work are changing the way natural supports are viewed and implemented. Hughes (1996, p. 153) offered a word picture of socialization that occurs both on and off the job that describe the desired effects natural supports attempt to create: "...how many of you work in offices where secretaries celebrate each others' birthdays with cakes, office managers play softball together on a league or attend happy hour on Friday afternoons, or janitorial staff swap stories as they have a smoke in the designated area outside a building?" Accessing resources that exist naturally rather than putting external supports in place is the underlying concept behind natural supports.

Natural Supports in the Supported Employment Literature

High unemployment and the lack of meaningful work is typical for people with disabilities. Economic and social costs of unemployment are high. The existing state of organizations juxtaposed on a devalued group of people presents specific social challenges. To provide employment for people with disabilities in an environment where the work is meaningful and all the people in the organization are committed to the work and each other will require special understanding, knowledge, and commitment. Knowing that more issues than just the work dictate successful employment will require a broad-

based understanding of workplace issues and people issues. Therefore, the need to create less restrictive environments to fully support natural supports is identified by Mallory (1995) as a fruitful goal of social policy to favorably influence outcomes of supported employment.

The research on supported employment and transition identifies the need to garner natural supports in the workplace for people with disabilities to facilitate successful employment. Sandow, et. al. (1993) described the evolution of support in the workplace and stressed the need for the support to come from within the organization where the individual is working.

Natural supports are needed in the workplace to support and assure a higher quality of work life for the people in the workplace (Chadsey-Rusch & Heal, 1995; Mank, 1994; Rusch & Hughes, 1989; Sandow, et. al., 1993). Quality of worklife of an employee improves when significant social supports are in place. A higher quality of worklife creates an environment where members of an organization are more productive. Kozleski and Sands (1992) corroborated the need of social support for a high quality of work life. They suggest that creating typical opportunities for people with disabilities will enhance their quality of life.

Brooke, et.al., (1995) highlighted natural supports as the best answer to eliminating segregation that may exist in the workplace. They note that facilitating community and business supports created a higher quality of employment in a supported employment framework. The supported employment model recognizes the potential need for long term supports. The best way to ensure the presence of long term supports is by creating natural supports rather than hired help as the support.

Barriers to natural supports. Human service systems designed to help people with disabilities gain entry into competitive work inhibit the culture that natural supports attempt to create. These systems are slow to respond to business needs (Bloom, 1993). To encourage natural supports it is important not to create an environment of overreliance on professionals. John McKnight (1995) suggested that a knowing professional can impede creating natural supports.

In addition, professionals may have a paradigm that is concerned with the level of involvement of a person's disability rather than what capacities an individual may have and use productively. Eliminating that paradigm automatically helps to create an environment with natural supports. Underreliance on community is a detriment to true community and natural supports. Early supported employment literature called for a job coach to provide support in the workplace. More recent literature notes that natural supports are much more powerful and effective than the element of a job coach (Mank, 1994). Mank (1996) suggested that natural supports may in fact be a pseudonym for supported employment.

Weick (1988) identified existing human service systems as a barrier to implementing supported employment. Using natural supports offers an alternative to the existing human services systems.

How to implement natural supports. Two themes emerge from the literature that shows vehicles to create natural supports in a workplace environment - family involvement, and depending on and involving the community emerge as opportunities to provide natural supports. The transition literature highlights the need for parents, siblings and friends to be active participants in life transitions of people (Berkell, 1988; Blalock,

1988; Mallory, 1988; Wieck, 1988). How this manifests itself in the workplace requires creativity and willingness to change existing systems that are part of the organization.

Developing strategies to utilize and create natural supports received significant attention in the literature. McDonnell, Nofs, Hardmont, & Chambless (1989) suggested that the way to make supported employment work is to provide supports for as long as is needed. Creating positive employment opportunities requires long term planning (Mank, 1994) and flexibility of services (McDonnell, et al., 1989).

Successful transition and placement into competitive employment requires interagency cooperation (Blalock, 1988; Hasazi, et. al., 1988; Rusch & Hughes, 1989). This cooperation needs to exist between supporting human service agencies. This discussion would also suggest that there needs to be a willingness for supporting agencies to "let go" and allow natural supports to be implemented.

Natural Supports in the Organization Development Literature

Sandow, et al. (1993, p. 34) argued that natural supports have "little or no meaning in business literature." They see business assistance programs as evidence that needed supports for people in business are already in place. However, defining natural supports to include more than issues that can be addressed by specific business assistance programs is consistent with ideas that are prevalent in the organization development literature. Organizations are trying to understand ways to support individuals in the organization to enable people to create greater ownership of organizational efforts and higher productivity. The literature that describes building inclusive communities, and supports enhancement of how people interact and are supported at work, is not typically

labeled natural supports. Community building and teamwork is described in the organization development literature and better captures the construct of natural supports.

Teams were defined by Senge, et. al. (1994, p. 354) as "any group of people who need each other to accomplish a result." Teamwork is the process of a group working together to accomplish the results desired. Natural supports, the promoting or holding up of people, describe characteristics that would be desired of a team. Creating environments where people work effectively together is the goal when creating a high functioning team. Teamwork requires cooperation and collaboration because "Cooperation takes advantage of all the skills represented in a group as well as the mysterious process by which that group becomes more than the sum of its parts" (Kohn, 1986, p. 28).

The way that organizations do work is changing. Work will not be standardized in the future; self management will become prevalent. Teams have become a critical vehicle to do the work of the organization. Because teams will be the primary working unit, teamwork skills become critical in organizational effectiveness. Joiner (1994) highlights teamwork as a critical component of successful organizations. He goes on to advocate deliberately working on teamwork skills as an important part of organizational success.

Driedger (1976) tested the effect of belonging to a community. His study showed that when people join a group and do not become socialized as an integral part of the group, there is a potential for marginality. This lack of community affects the effectiveness of the organization.

How people work together is a critical organizational issue. Ostroff (1993) described the need for Person-Environment Congruence. He demonstrated that organizations are more effective when attributes of people working in the organization and

the situational environment in which people are working match. These attributes include: (a) willingness to participate, (b) cooperation, (c) a feeling of warmth in the organization, (d) individual autonomy, (e) with opportunities for achievement. This places demands on organizations that are significantly more complex than just providing a job. For organizations to be effective and thrive, there is a need for workers to have personal interaction and opportunities for intrinsic satisfaction to be derived from the work.

Somers (1995) provided more support for organizations encouraging supportive environments for all people. He showed that people who are affectively committed to an organization, i.e., emotionally attached and accept the values of the organization, are more likely to stay with the organization and have a lower absenteeism rate. This research may be extrapolated to show that there is a greater discretionary effort put forth by people when they have an affective commitment to an organization. Natural supports or teamwork foster an affective commitment to an organization.

Creating a sense of community is analogous to building a setting where natural supports and teamwork are present and both have an opportunity to flourish. Kofman and Senge (1993) identified three foundations that learning organizations need. They include:

1. a culture based on love, wonder, humility and compassion
2. a system for generative language (dialogue), and
3. the capacity to see work and life as a system

The first of these foundations describes how teamwork and natural supports would be realized. This foundation suggests that people need to be ready to accept others even when they do not understand others. Creating this requires a community of servant leaders, i.e., people whose desire is to serve rather than to be the owner or master of a

group. "Only with the support, insight, and fellowship of a community can we face the dangers of learning meaningful things" (Kofman & Senge, 1993, p 22). Creating natural supports and teamwork allows organizations to learn difficult lessons.

The importance of community and recognizing that people are the primary assets of an organization are what makes companies long lived (DeGeus, 1997). When systems are created that make people feel like parts of the whole rather than just cogs in the wheel, companies last longer.

There are areas identified in the literature that are barriers to working well together as teams. Kohn (1993) described the negative effect that individual rewards can have on the workplace. He suggested that individual rewards get in the way of people working well together, and in fact create an environment where people are working for individual gain rather than collective gain. Unless systems are put in place that reward team performance, organizations will not be as effective as if there is a collective effort.

Bartlett and Ghoshal (1995) described traditional, hierarchical organizations as having these four elements: compliance, control, constraint, and contract. This suggests a restrictive environment where the emphasis is more patriarchal than supportive. Creating systems to ensure compliance and creating contracts to enable control and constraint are ways to inhibit natural supports and teamwork.

There is a plethora of literature on the pragmatic issues of teambuilding. Typical of this literature are Beck and Yeager's (1996) requirements for effective teamwork:

1. presence of leadership
2. individual contributions are necessary

3. teams can and should be functional quickly
4. focus is required to avoid conflict
5. clear expectations and boundaries
6. accountability resides in individuals rather than in teams
7. team leaders get all team members to lead and support each other

These elements support effective teamwork, but it is clear from the literature that these are neither necessary nor sufficient conditions for effective teams (Joiner, 1994; Scholtes, 1988; Weisbord, 1989; Wellins, Schaaf & Shomo, 1994). Common themes of what is required for effective teamwork include the ability to see and understand other team members' viewpoints, trust in other team members, support, and a sense of community from other team members.

DeGeus (1997) suggested that organizations need to have people interacting to enable the organization to continue to learn. That interaction requires effective communication. The concept of dialogue enables effective communication. Isaacs (1993) described the process of dialogue as a way for people to address communication issues with others. Dialogue means to work through instead of tear apart. An effective approach to solving problems is to understand personal mental models and attempt to understand other's mental models so that a common framework exists. Issacs suggested that dialogue is important because organizations face complexity no one person can address alone. He goes on to suggest that the way that groups currently address group thinking backfires.

Other requirements for effective teamwork and communities are empathy and compassion (Kofman & Senge, 1993). Turnbull, Turnbull and Blue-Banning (1994)

describe compassion and empathy as the "shoes test" - or empathetic reciprocity. The ability to understand another by walking in their shoes changes the mindset and inquiry perspective when dealing with other people.

Dimension #4: Inclusive Environments

Definition of Inclusion

Larkey (1996, p. 300) defined inclusion in the context of interactions in culturally diverse groups as "the practice of including individuals in the network of information, contacts, and opportunities". She goes on to suggest that these practices should be implemented in both deliberate and passive ways in the organization.

Inclusion in the Supported Employment Literature

People with disabilities live in an environment of exclusion and segregation (Shapiro, 1993). This environment is currently being challenged by a civil rights movement of people with disabilities. A critical element of this civil rights movement is that people with disabilities must not be viewed as helpless and dependent. However, in the workplace the focus is often on how impaired an individual with a disability is rather than what capabilities that individual may have. In fact, labels alone that individuals carry become barriers (Bloom, 1993). It is necessary to get around the idea that people have disabilities and instead look to the unique skill sets that individuals with disabilities bring to the workplace. The question needs to be not, "Can individuals work?", but instead "What supports are needed for individuals to be successful in the job?" (Rusch & Hughes, 1989). There are mandates in place that are encouraging creation of inclusive workplaces and support to make more efforts to provide for an integrated environment. Revell, Wehman, Kregel, West & Reyfield (1994) encouraged participation by people with more

severe disabilities in supported employment. Test (1994) and Mank (1994) both highlighted the need for integration, and highlight the positive effects of an integrated work environment.

Johnson and Rusch (1994) identified vocational training in a sheltered workshop (an exclusive environment) as a critical problem with gaining integrated employment for persons with disabilities. People without adequate real life training are not prepared to meet the rigors of competitive work. It is important to provide whatever services are required to train individuals for competitive work (McDonnell, et. al., 1989). Providing training that improves understanding of the workplace is providing valuable support. Training in a segregated, exclusive environment does not meet these requirements.

Integration and inclusion suggest that people with disabilities are included in typical fashion in the workplace. Integration is not defined as the presence of individuals with disabilities in the workplace. Mere presence is vastly different from people being present and interacting in typical ways, participating in the everyday affairs of an organization. Sandow, et. al. (1993) identified a problem with supported employment being the lack of social integration. In their research, even though people with disabilities were present in the workplace, there was little interaction between people with disabilities and their typical peers. There is a lack of social integration even though there is a greater presence of physical integration of people with disabilities in the workplace (Mank, 1994). Supported employment has created opportunities for presence, but is lacking in providing socially integrative environments.

There are four types of supported employment identified in the literature by Rusch & Hughes (1989). They include the small business model, the enclave model, the work

crew model, and the individual model. Kregel, Wehman, & Banks (1989) showed that the individual model worked best because the other model types stigmatized the workers because the work environments did not represent the true community. Working in the individual model reflects the most inclusive of the four models identified by Rusch.

The existing system of employment and support for people with disabilities attempting to gain competitive employment supports segregation (Johnson & Rusch, 1994), and is often a barrier to work for a person with a disability, which highlights the need for inclusive organizations. Evidence shows that the presence of a person with a disability has a significant effect on how that person is perceived in the workplace. The type of disability that an individual has also dictates their success in the workplace (Kregel, et.al., 1989). The more involved or severe the disability, the less likely it is that the person will be successfully placed.

Social integration provides for increased social participation, which provides for increased feelings of social support, which allows for increased work acceptance, which allows for increased personal acceptance of any individual, which improves the overall quality of life for any individual (Chadsey-Rusch & Heal, 1995). Quality of work life is dictated by feelings of social acceptance. This dictates the need for more social integration in the workplace for people with disabilities.

The question becomes how to create an integrated work environment. The supported employment literature suggests that it is critical that workers are not isolated from social interaction (Johnson & Rusch, 1994). Bloom (1993) described an example of human service professionals screening people instead of allowing people to represent themselves for employment opportunities. This surely undermines and sabotages social

interaction. Chadsey-Rusch and Heal (1995) identified the lack of prioritization of social integration as a barrier to competitive work, implying the need for concentrating on social integration in the workplace. In Rusch and Hughes's (1989) overview of supported employment, they identified the need for people with disabilities to have regular contact with typical people. This is encouraged by installing natural supports in the workplace.

In one radical approach to changing the existing system of finding employment for people with disabilities, Mank (1994) suggested that there should be no segregated options for employment. He stated that the only way to get around segregated options is to eliminate their use. What is important in Mank's view is participation, specifically social participation.

Motivation for inclusive environments in organizations can take two avenues. It is possible to argue for diversity because it has a moral imperative. Schacter (1993, p. 31) stated that "... a representative workforce communicates an important impression of social fairness in public institutions and provides role models for minority group members." However, Wann (1993, p. 23-24) argued that "In business as in human beings, it is the differences that result in progressive, evolutionary change. Inbreeding in business and people ultimately produces idiots ...diversity is not a moral imperative. It is a business strategy."

Organization development literature is supportive of diversity efforts and cites productivity, quality of work life, and creativity as some of the benefits of embracing a diverse workforce (Schacter, 1993; Senge, et. al., 1994; Thomas, 1990; Wann, 1993). However, organization development thoughtware is also focused on creating a shared vision of an exciting future (Bartlett & Ghoshal, 1995; Deming, 1993; Scholtes, 1988;

Senge, 1990; Senge, et. al., 1994). These apparently conflicting goals present a paradox that says organizations need a unified approach (a shared vision) and a diversified approach (embracing diversity) to how they manage the organization.

Sherif and Sherif (1965) studied intergroup relations and ways to improve the relationships that may resolve this paradox. They defined a group as a delineated social unit that had measurable characteristics and had consequences for the behavior of its members. This definition included both structure and a set of norms for the group. Intergroup behavior occurs when a member of a group behaves toward another group using their own group's norms. This can create tensions between the groups and inhibit an inclusive environment. Sherif and Sherif suggested that the way to reduce tension is through contact and creating superordinate goals.

Superordinate goals are by definition more important to an individual than conforming to group norms. Creating superordinate goals presents a solution to the paradox of a shared vision while embracing diversity. Superordinate goals are equivalent to a shared vision. Senge et. al., (1994, p. 28) described the process of creating a shared vision while embracing diversity when he said that "...the discipline of building shared vision is centered around a never ending process, whereby people in an organization articulate their common stories - around vision, purpose, values, why their work matters, and how it fits into the larger world."

Inclusion as defined in the supported employment literature is equivalent to embracing diversity. Because culture is learned and transmitted to new members through a learning process, humans often mistake their own culture as pan-human culture (Jordan, 1995). This highlights the need to have multiple cultures in the workplace.

Getting diverse communities of people to work together will be the challenge for the workplace in the future.

> "Given the nature of global and institutional problems, thinking alone at whatever level of leadership is no longer adequate. The problems are too complex, the interdependencies too intricate, and the consequences of isolation and fragmentation too devastating. Human beings everywhere are being forced to develop their capacity to think together - to develop collaborative thought and coordinated action" (Isaacs, 1993, p. 24).

Kofman and Senge (1993, p. 6) also talked about the importance of building communities of commitment: "Without communities of people genuinely committed, there is no chance of going forward." DeGeus (1997) argued that only companies that embrace diversity and offer inclusive environments that value new ideas and new people will be successful in the long run. It is necessary to have a tolerance of new ideas if the organization is to last. Trust is a necessary component for organizational effectiveness (Senge, et. al., 1994), and trust can be created when there is a bias for inclusion and involvement (Ghoshal & Bartlett, 1996).

Fullan (1993) described two kinds of learning required in organizations: inner learning and outer learning. Inner learning is self evaluation, and outer learning is about connectedness. Outer learning happens when there is a multiplicity of culture, and people can learn from the diversity within the organization. Outer learning is necessary for a diverse workforce to work collaboratively. Creating an environment where marginal populations have opportunities to contribute supports all members of the organization. Thomas (1990) suggested that the barrier to gaining input from all members of an organization lies in the fact that there is not an environment to get the most from all

people of an organization, not just a minority population. Inclusive organizations will facilitate personal effectiveness of all its members.

Summary

Personal skills of self efficacy for teamwork and readiness for change, and an organizational culture with natural supports and an inclusive environment are the researcher's summary of critical elements of the supported employment model. The model in Figure 1 shows that these elements are hypothesized to support personal empowerment, which is reviewed in the next section.

Empowerment

Definition of Empowerment

Empowerment is intrinsic motivation towards work realized in four cognitions or feelings by individuals who are empowered (Thomas & Velthouse, 1990). These cognitions are feelings of a sense of impact of individuals' work, personal competence in their work, the meaningfulness of work, and personal choice toward the work that they do. This definition offers dimensions to better understand personal attitudes embraced in an empowered workplace.

Personal Choice in the Supported Employment Literature

There is an obvious need to consider an individual's skills, aptitudes and interests when taking into account career opportunities. This requirement is often not perceived as obvious when placing people with disabilities into work. It is an easy trap to believe that it is necessary to dictate career options or paths for people based on another's perception of their capabilities. This has been particularly true for individuals with disabilities.

However, there has been a transition in organizations from that of a patriarchal environment to one that requires personal responsibility (Pritchett, 1994).

The need for personal choice when selecting appropriate work is highlighted as a critical component of successful placement in work for people with disabilities (Blalock, 1988; Mank, 1994; Wehman, 1990; Weick, 1988). The literature consistently reports the need for deliberate efforts on the part of individuals using the supported employment model to incorporate personal choice when finding appropriate work. Independence and choice should be fostered instead of hindered (Mallory, 1995). Mank (1994) described programs having a focus of choice and self determination, with control being in the hands of the clients, as an innovation in supported employment that makes supported employment work. In Rusch and Hughes's overview of supported employment (1989) the need for independence and personal choice was a critical need of supported employment.

The individual needs to be viewed as a customer, not a consumer (Brooke, et.al., 1995). The distinction lies in the mindset that the service provider presents. A consumer gets services the provider feels they need. A customer gets the services the customers feel they need.

Another element of personal choice is awareness of available options. This requires knowing about available work opportunities and exposure to the work to gain an appreciation of whether the work addresses personal interest. To ensure this opportunity, it is important for individuals using the supported employment model to deliberately get exposure to different kinds of work. This need for individualized career development to find work appealing to an individual is noted by Blalock (1989), Rusch and Hughes, (1989), Brooke, et. al., (1995), and Mank (1994). Blalock also noted the need for

preparation and training for work that appears interesting to people. Hasazi, et. al. (1988) identified the need for career planning, and noted individualized planning as a promising practice for transition of people with disabilities. McDonnell, et. al., (1989) identified individualized planning as a critical component of supported employment.

A person centered view in work facilitates a positive self perception. Brooke, et. al. (1995) suggested that the most important element of successful employment is how people view themselves. Positive self esteem is facilitated when people find work of personal interest. Johnson and Rusch (1994) identified the need for a paradigm that says that a person with a disability is capable of work rather than a limiting view of any person's capabilities. The paradigm needs to consider what supports are needed for the person to do the work, not what work is appropriate for the person to do (Rusch & Hughes, 1989).

A job match is a critical component to gaining competitive work and is prescribed by the supported employment model (Brooke, et. al., 1995; Johnson & Rusch, 1994; McDonnell, et. al., 1989; Rusch & Hughes, 1989). In a person centered environment, the potential worker should also participate in evaluating a job match. Johnson and Rusch (1994) suggested that a job match should consider more than job skills alone. It includes a match of interest in the work, further supporting a paradigm of understanding what supports are needed to do the work rather than if an individual is able to do the work.

Another component of successful placement into competitive work is creating a caring community in which to work. Test (1994) suggested that successful placement requires addressing worker loneliness. Successful placement was improved in the presence of social advocates. Quality placement is a function of the worker's quality,

productivity, ability and support (Rubin, 1993). It is important to note that no one of these factors alone influenced successful placement. Instead, all of the factors together predicted successful placement.

Empowerment in the Organization Development Literature

Empowerment is beneficial to organizations because it has been identified as a key component of managerial and organizational effectiveness (Conger & Kanungo, 1988). When people feel empowered they have higher self-efficacy and demonstrate more initiative and persistence in the work that they do (Thomas & Velthouse, 1990). An empowered person has more intrinsic motivation for a task. This creates less need for control and supervision of managers to get the needed work done. Deming (1993) encouraged managers and leaders to create an environment where people find joy in work, i.e., where people feel empowered to do their work.

Empowered people are energized by the tasks they perform, and have a sense of vitality and enthusiasm about their work. To empower is the same as to energize. Empowering actions can be viewed as delegating or enabling, both which give power to an individual (Thomas & Tymon, 1993).

Conger and Kanungo (1988) first suggested that empowerment be viewed as a motivational construct. Thomas and Velthouse (1990) extended the idea to include four cognitions or feelings about tasks that people do. They suggested that people are empowered when they feel that the work that they do makes a difference (impact), when they have the skills required to do the work (competence), when there is intrinsic meaning in the work (meaningfulness), and when the work matches their own values and is something they pursue because of satisfaction for the task itself (choice).

Linkage of Dimensions of Supported Employment to Empowerment

The model being examined in this research hypothesizes that the organizational culture of natural supports and inclusion, and the individual characteristics of self-efficacy toward teamwork and readiness for change will support empowering individuals. Hackman and Oldham (1976) postulated a work design model that showed how to design jobs so that the job itself motivated workers. Renn and Vandenberg (1995) looked at the critical psychological states needed in that model of work and discussed the need for the presence of intrinsic motivation components in the model.

Empowerment should not be viewed as a personality trait, but instead as a culture or environment at work (Spreitzer, 1995). This suggests that there are interventions that can be put in place to facilitate an environment that allows allows individuals to be empowered. Thomas and Tymon (1997) identified building blocks to support the four cognitions or feelings that people need to experience to feel empowered. Their model of choice, competence, meaningfulness and progress help formulate the hypothesized relationship between elements of the supported employment model and the four feelings of individual empowerment.

Choice has building blocks of trust, security, and shared information which are valuable in creating an inclusive environment. In addition, the building block of security should be correlated with a high level of readiness to change in individuals.

Competence has building blocks of positive feedback and skill recognition. Good teamwork uses positive feedback as a valuable tool, and recognizing skills in others is typical of a system high in natural supports. Meaningfulness has building blocks of clear values and non-cynical environments. For inclusive environments to be effective, they

need to have shared value systems even though they are diverse. Non-cynical environments are characteristic of a system high in natural supports. Finally, progress has building blocks of collaboration, which is characteristic of high levels of teamwork, and celebrations, which are representative of high levels of natural supports.

Conclusion

The supported employment literature identifies four dimensions that are characteristic of best practices of the model. They include natural support, ability to work in teams, readiness for change, and inclusive environments. These dimensions are also typical of goals and interventions suggested in the organization development literature to enable organizations to be more effective. This research examined the relationship between these dimensions and the construct of empowerment.

CHAPTER 3: METHOD

This chapter reviews the process used to conduct the research. The following sections describe the theoretical population that the research is attempting to describe, the actual sample on which research is based and the sampling procedures. The second section describes the location and setting of the research. The next section identifies the research design. The next sections describe the variables to be measured in the research and the instruments used in the research in their original context. Data collection procedures are described, and the last section describes the data analysis.

Theoretical Population, Sample, and Sampling Design

Theoretical Population

The theoretical population to which this study is to be generalized are employees of large, multinational, publicly owned manufacturing organizations. This set of organizations can be characterized by complexity of the organizational structure, stresses created by their position in financial markets, the markets they serve, and job security of members of these organizations.

Organizational structure typically presents several issues in these companies (Scholtes, 1988). Team environments are emerging to replace traditional hierarchical structures. The breadth of responsibility of team members is increasing as organizational structures flatten. Roles of support/staff operations have changed as specialized workers are integrated into work areas, creating leaner staff support.

Public organizations have to answer to investors. There is pressure for continuous, short term improvement of their financial positions (Hopp & Spearman, 1996). This creates stress on organizations that may manifest itself in ways that affect morale and productivity.

Global markets require an understanding of multicultural issues and capacity to react to events that take place around the world by organizations attempting to serve those markets (Scholtes, 1998). Continuous rapid change of customer requirements demands flexibility in the organization and requires an ability to change products quickly, and change the way organizations are staffed to produce those products.

Historically, large corporations employed people for a lifetime. The new *contract of employability* instead of employment (The Economist, 1993) has evolved through significant downsizing and restructuring of many of these corporations (Ehrensal, 1995). Ongoing right-sizing in organizations has created an environment that affects not just employees who have lost their jobs, but also the people who remain in positions with less confidence in long term employment prospects.

President Bill Clinton, Commerce Secretary Ron Brown, and Labor Secretary Robert Reich convened a conference on the Future of the American Workplace in Chicago in July 1993. The report from this conference (Brown & Reich, 1993) highlights team structure, global markets, and job stability as issues that are prevalent in today's workplace. The shift from traditional ways of providing goods and services toward new and leaner processes will continue to put pressure on organizations to redesign work and find new markets to make themselves viable enterprises. It appears that the new constant is the need to adapt to rapidly changing markets and workplace demographics. The site that will be

sampled for this research represents an organization undergoing the changes in structure, market shifts, and responding to short term financial pressures.

Sample

This site is organized into five manufacturing divisions and five support/staff divisions. Each of the ten divisions has several operating departments which are described in Table 1.

Table 1

Organizational Makeup of Plant Site Personnel

Division	Type	Number of Departments	Crew Structure?	Number of Employees
Division #1	Support	21	no	232
Division #2	Staff	5	no	70
Division #3	Staff	2	no	50
Division #4	Staff	4	no	59
Division #5	Support	3	yes	94
Division #6	Manufacturing	7	yes	444
Division #7	Manufacturing	4	yes	134
Division #8	Manufacturing	4	yes	96
Division #9	Manufacturing	4	yes	552
Division #10	Manufacturing	1	yes	122
		55		1853

The 55 departments are not organized identically. Manufacturing departments are organized into crews that support different areas of operations at different shifts during the day. Each crew may have shift supervision in addition to department supervision. Support/staff departments do not typically have a crew structure. People in these departments report directly to department managers or to lead people in the department.

Sampling Design

The sampling design included a mixture of non-probability (purposive) and probability (simple random) procedures to generate samples for both the survey and

interview process used in this study. To clarify the complexity of the sampling design, the remainder of this section outlines how the stages of sampling occurred.

First Stage

The departments were selected using personal knowledge of their operating philosophies. Two of the variables to be measured evaluated department characteristics. These variables include the level of inclusion and the level of natural supports in the respective departments or crews.

High levels of inclusion are characterized by information being readily available to people within the department, individuals feel that they fit in, and there are few gender or ethnicity inequities. Low levels of inclusion have the "good old boy network" in place, information and access is limited, and gender and ethnicity bias exists. High levels of natural support would demonstrate social interactions in the workplace, significant interactions on the job, and there would be interactions between employees outside of the workplace. Low levels of natural support would be characterized by limited social interactions in general, there would be little on the job interaction with other workers, and interactions outside of work would be rare.

Departments were picked with an effort to get all combinations of levels of inclusion and natural support. There were two ways to attempt to the selection process that covered this two dimensional space. Given the theoretical population is diverse enough, a large enough random sampling of this population would select a range of departments so all combinations of levels of natural supports and inclusion would be represented. Using purposive cluster sampling with knowledge of how the departments operate allowed a smaller sample with some assurance that the departments still cover the

space. The researcher has worked at this site for 18 years in a variety of positions in several of the divisions. This experience allowed an educated guess of where different departments would fall in this two-dimensional space. For that reason purposive sampling was used to find departments to study. Figure 2 shows the specific departments or crews that fit the profile in the estimation of the researcher.

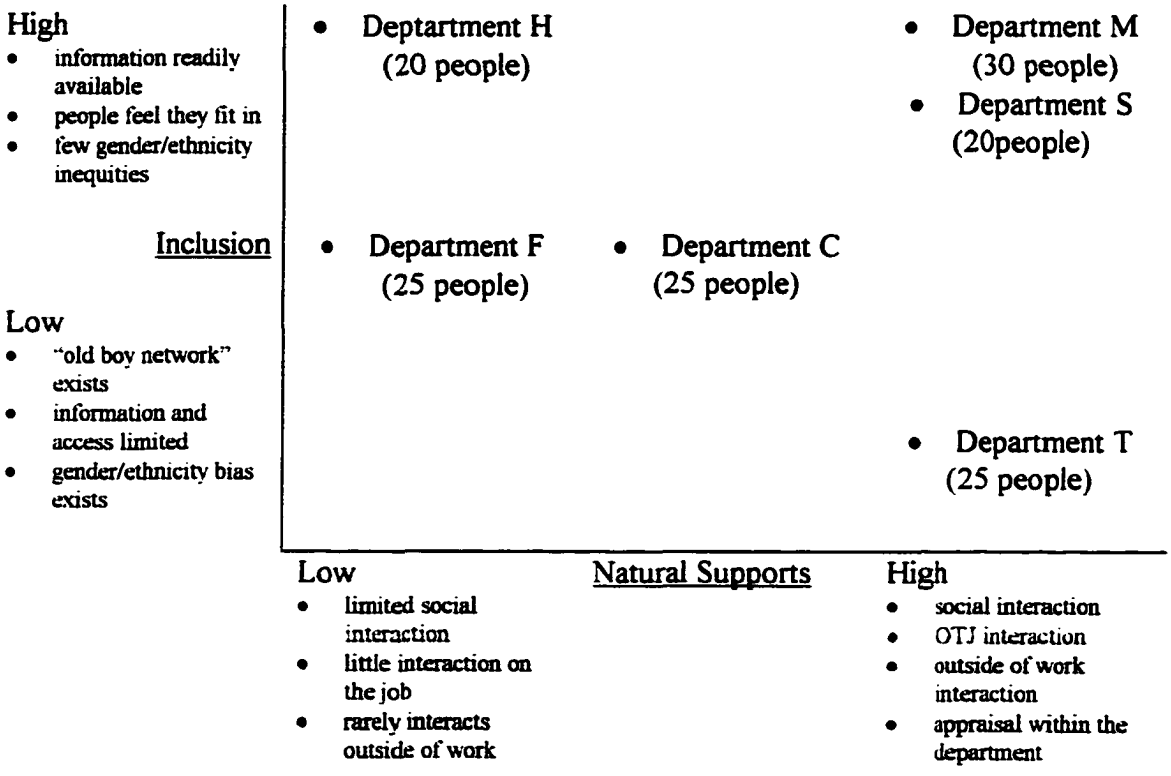

Figure 2. Estimated relationship of natural support and inclusion for each of the departments to be sampled.

Cluster sampling was used on each of the departments selected. For the two nonmanufacturing departments, every member of the department was asked to complete the 38 item questionnaire. In the other four manufacturing departments, one crew from

each department was selected and all members of the crew were asked to complete the survey.

Description of departments surveyed. Department H is a staff organization that consists predominantly of professionals with college degrees who support the plant-site on personnel issues. These professionals provide guidance to the divisions and departments on corporate policy issues, and help execute the human resource functions. This entire department was asked to complete the questionnaire and participate in the research.

Department F is a staff organization that consists of professionals and technicians with college degrees that support the plant-site on investment and cost issues. These personnel provide input into financial decisions to the divisions and departments. This entire department was asked to complete the questionnaire and participate in the research

Department C is a manufacturing department that consists of three crews of production personnel, and limited staff support. One crew was asked to participate in the research. Individuals surveyed are typically high school graduates and work shifts. The crews work a week of day shifts, followed by a week of evening shifts, followed by a week of night shifts.

Department M and Department S are manufacturing departments that consists of four crews of production personnel and a staff support group. The support staff work straight days and can be called in for production emergencies. One production crew was asked to participate in the research. These employees are typically high school graduates that work shifts. The crews work 12 hour shifts. They work two day shifts followed by a day off, then two night shifts followed by two days off, then three day shifts followed by two days off, then three night shifts followed by three days off.

Department T is a manufacturing department that consists of three crews of production personnel and a staff support group. The production personnel are typically high school graduates that work shifts. The crews work 12 hour shifts. They work two day shifts followed by a day off, then two night shifts followed by two days off, then three day shifts followed by two days off, then three night shifts followed by three days off. One of the crews was asked to participate in the research.

Table 2 summarizes the characteristics of the sampled departments.

Table 2

Characteristics of Sampled Departments

Department	Type	Work Schedule	Coverage
Department H	staff	days	5 day/8 hour
Department F	staff	days	5 day/8 hour
Department C	manufacturing	3 shift	5 day/24 hour
Department M	manufacturing	4 shift	7 day/24 hour
Department T	manufacturing	4 shift	6 day/24 hour
Department S	manufacturing	3 shift	5 day/24 hour

Second Stage

Random sampling was employed to identify six members of each of the departments sampled. Supervisors from each of the departments sampled were then interviewed using the natural support instrument to measure the level of natural supports of the six members from each cluster. This interview was used to assess the dimension of natural supports. The six members selected to evaluate in the interview with their supervision were identified by the supervisor. The researcher had no knowledge of who the selected individuals were .

This was done by using a roster of the clusters sampled, numbering the roster, and then using a random number table to pick six members from each cluster.

The sample size of six individuals per cluster was selected with the following rationale. The variability of the response of the natural support instrument was unknown before the sample was taken. A rough estimate of one standard deviation was derived by taking a range of the available responses and dividing by 4, because in a normal population 95% of the responses are between $\pm 2\sigma$. Therefore, one standard deviation was estimated to be: $s = \frac{(5-1)}{4} = 1$.

The preciseness of an estimate can be described by a 95% confidence interval, which is constructed by $\pm t_{\alpha,n-1} * \frac{s}{\sqrt{n}}$, where s is the estimated standard deviation, n is the sample size, and $t_{\alpha,n-1}$ .is a percentile from a Student's t distribution used to specify the level of confidence.

If the sample taken is a significant portion of the size of the population sampled, then the finite population correction factor should be used for the estimate of the standard deviation (Snedecor & Cochran, 1937). This confidence interval is constructed by $\pm t_{\alpha,n-1} * \sqrt{\frac{n}{N-n}} * \frac{s}{\sqrt{n}}$, where n is the sample size, N is the population size, s is the estimate of the standard deviation, and $t_{\alpha,n-1}$ is a percentile from a Student's t distribution used to specify the level of confidence. Figure 3 shows the relationship between sample size and preciseness of the estimate. A sample size of six was determined to be an adequate sample

size to minimize the number of people to be assessed while still allowing for reasonable preciseness of the estimate.

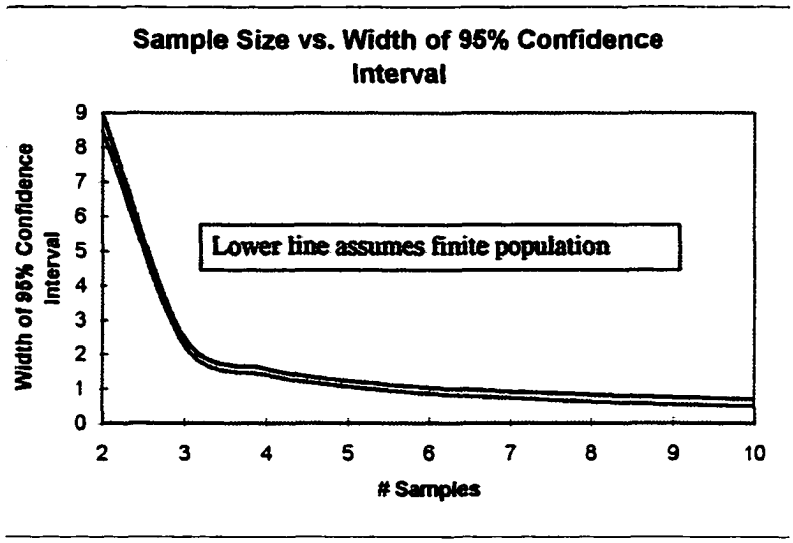

Figure 3. Estimated width of a 95% confidence interval for the given number of individuals sampled for the natural supports questionnaire.

Identification of the Research Design

This research examined the contribution that four selected dimensions have toward employee empowerment. A special case of the hierarchical linear model, a random coefficients model, was used to analyze the data. The dependent variable, empowerment, was measured on each individual. The independent variables had either an individual or a departmental component. Two of the independent variables were viewed as treatments that affected the entire department. The other two independent variables describe attributes of individuals rather than the attributes characteristic of the entire department. A hierarchical model was selected for the analysis to enable correctly estimating the underlying error component of the model while estimating the relationship properties of the research (Bryk & Raudenbush, 1992).

An analogy demonstrates why hierarchical regression was used. Hierarchical regression is often used in classroom environments. Student achievement may be the variable of interest. Achievement may be believed to be a function of socio-economic status and the teacher for the class. Variables to be measured on the student specifically might include achievement and socio-economic status. A grouped variable attributed to the entire class would be the teacher, because the teacher impacts all students in the class.

Figure 4 shows this example in graphical form. The effect of socio-economic status on achievement depends on the teacher in the classroom. To correctly estimate the underlying error, the overall effect of the teacher needs to be included in the underlying model to get a clean estimate of the effect of socio-economic status.

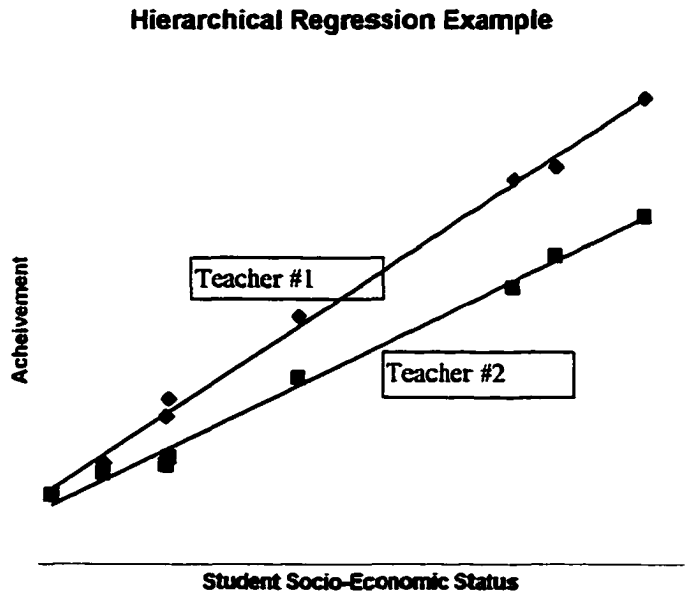

Figure 4. An example of data to be evaluated using a random coefficients model.

The questionnaire for this research uses a five point Likert scale for the dependent variable and three of the independent variables. The natural support instrument utilizes an

interview with three discrete responses. These responses were coded as 1, 3, or 5 to make this variable commensurate with the other dimensions in the study.

In addition to the hierarchical regression analysis, exploratory data analysis included simple analysis of variance and a correlational analysis of all of the variables. Plots were constructed for all the data to explore potential relationships.

Variables to be Measured

The dependent variable in this research was empowerment. Thomas and Tymon (1993) anticipated differences in individuals' attitude toward work when members of an organization are empowered or not empowered. Empowered employees are energized by the work, and find intrinsic motivation in the tasks they need to perform. In contrast, employees who are not empowered find their work draining and drudgery.

Four independent variables were measured. These included social skills (self efficacy for teamwork), inclusion, natural supports, and readiness for change. Self efficacy for teamwork, readiness for change, and inclusiveness are variables that were measured and then responses assigned to each individual surveyed. Individual responses from natural supports were measured then averaged by cluster. The average of each cluster was assigned to each individual surveyed within each cluster.

Instrumentation

Five separate instruments were found to measure each of the dimensions to be studied. Four of the instruments are questionnaires that use a five point Likert scale and were filled out by individuals in the study. The natural support instrument requires an interview with supervision familiar with individuals in their respective departments. A qualitative assessment was made that was coded into a 1, 3, or 5 response.

Empowerment was measured using twelve items identified in Spreitzer (1995). This questionnaire was developed to assess four psychological dimensions of empowerment: meaning, competence, self determination, and impact, and are generally equivalent to the theoretical dimensions identified by Thomas and Velthouse (1990). Three questions measure each dimension, and responses to the twelve questions are averaged for each individual. Cronbach's alpha was measured to be .72 when this instrument was used in an industrial setting. Face validity is evident from the instrument. Discriminant and convergent validity were evaluated and each of the four dimensions of empowerment were viewed as necessary contributors to the overall construct of empowerment (Spreitzer, 1995).

Social skills were measured using eight items from Eby and Dobbins (1997) that measure self efficacy for teamwork. The original purpose of the overall instrument was to understand the collectivist orientation of individuals toward team settings. The eight items in this instrument specifically measure an individual's perception of their ability to work well in a team environment. The alpha coefficient was measured to be .77. Face validity is apparent from the instrument.

Inclusion was measured using four items from Larkey (1996). Larkey's study examined communicative interactions in workgroups of diverse individuals. She identified four dimensions of the construct of diversity. One of those dimensions, inclusion, was used to quantify the level of either marginalizing members of the workgroup or including all members of a workgroup and allowing individuals access to information and people. The alpha coefficient of reliability for this specific dimension was measured to be .75. Face validity is apparent from examining the instrument. The instrument was tested for

construct validity against the measures of power, cohesiveness, detail and values. The correlations were significant and fairly large (-.45 and .55) for power and cohesiveness, and negligible for details (the level of detail of work the group had to do) and values (whether people valued inclusive settings).

The instrument to measure the variable readiness for change was developed by Hanpachern (1997). She identified three dimensions of readiness for change: promoting change, participating in change, and resisting change. Fourteen items measure this construct, and Cronbach's alpha was measured to be .82.

The level of natural support is measured using a seven item interview developed by McNair & Rusch (1992). This instrument was designed to assess the level of natural support in a supported employment environment. They suggest that this instrument can be used to assess a typical work environment for potential supported employment options, so it can be used in an environment that is not using a supported employment model. Each of the nine items was measured by conducting an interview with the supervisor of each cluster sampled looking at six randomly selected individuals from the cluster. Inter-rater reliability was shown to be .82 and .80 for two different studies, and the test-retest reliability was .88. Content validity was verified by a survey of 49 directors of supported employment projects in Illinois administered by McNair and Rusch. Their conclusion was that the instrument measured the level of co-worker involvement with the person of interest. An average of the six responses was used for all individuals in the cluster sampled.

Table 3

Summary of Instrumentation Utilized

Variable	Source	# Items	Scale Type	Reliability Estimate
1. Empowerment	Spreitzer (1995)	12	Likert (1-5)	.72
2. Social Skills	Eby & Dobbins (1997)	8	Likert (1-5)	.77
3. Inclusion	Larkey (1996)	4	Likert (1-5)	.75
4. Natural Support	McNair & Rusch (1992)	7	1, 3, 5	.88
5. Change	Hanpachern (1997)	14	Likert (1-5)	.82
Entire questionnaire		45		

Data Collection Procedures

An initial contact by the researcher with the site Human Resource Director provided permission to pursue the study. After meeting with the Human Resource Director, a meeting was arranged with the site manager to gain approval to do the study on the site. Additional approval from the Corporate Clearance department was gained via mail correspondence. After gaining the site manager's approval to proceed, meetings were held with each of the division managers to gain their approval of using departments in their organizations for the study. Finally, meetings were arranged with each of the department managers to describe the research and ask for their support in pursuing the study. After gaining the department manager's consent, individual departments were contacted and arrangements made to survey the department members.

Data collection required that each individual in each of the six clusters sampled complete a 38 item survey. The survey was conducted during group meetings. The group

meetings in the manufacturing areas were arranged during shutdowns or crew meetings before the shift production started. Group meetings with staff support areas were held during regularly scheduled staff meetings. The survey was introduced by department supervision with the researcher not present. The questionnaire was administered to each cluster, and the instruments collected by department supervision immediately after.

The researcher also interviewed department supervision about six randomly selected individuals in the department to collect information on the level of natural support in the department. These meetings were scheduled between the researcher and department supervisors individually during regular work hours. Identity of the six individuals identified in each group was not communicated to the researcher.

The researcher introduced the goal of the study to supervisors administering the survey. The supervisors then communicated the goal of the study to their departments, and assured the group completing the instrument that individual responses to the questionnaire were confidential. The departments were told that aggregate information and conclusions from the study would be reviewed with each of the departments at the end of the study.

Table 4

Number of Individuals in Each Department and Number Sampled for Study

Department	# Members	# Members Surveyed	Date of Meeting
Department H	68	16	9/2/98
Department F	20	20	9/4/98
Department C	62	11	8/26/98
Department M	215	29	9/2/98
Department S	150	30	9/3/98
Department T	122	10	8/29/98
Study	637	116	

Note. The number of members surveyed in each department are 100% of the surveys sent out.

Data Analysis

The data from the survey were collected and input into appropriate statistical packages. Summary statistics and plots were used for initial exploratory data analysis. Hierarchical regression was done to explore hypothesized relationships. JMP and Excel were used to analyze the data.

CHAPTER 4: ANALYSIS

Introduction

Purpose of the Study

The purpose of this study was to examine how variations in organizational culture influence the level of empowerment of members of an organization. This chapter presents results from the data analysis described in the previous chapter. Specifically, this analysis explores a regression of the factors of natural support, inclusion, self efficacy for teamwork and readiness for change on empowerment across and within six departments of a large industrial organization.

This chapter begins with a description of the demographics of the population from which a sample of individuals participated in the research. Summary statistics of the variables calculated from the questionnaire are shown. Differences of these variables by department are explored. An a-priori assumption of the range of natural support and inclusion in the sample is discussed. Correlations of the variables of interest are presented graphically and by table. Finally, the protocol used in the regression analysis is described and the estimates of coefficients calculated from the regression are shown.

Data Collection

The 38 item questionnaire was completed by 116 individuals. The responses from groupings of questions of these items were averaged to measure each of the identified

dimensions. The questionnaire was completed in team meetings at the workplace of the individuals.

Demographics of the departments sampled are shown in the following section. Age of employees, years of service with the company, gender and education are summarized.

Demographics

The distribution of ages of individuals sampled varies based on the department in which individuals work. Some of the departments have more young workers because they act as a feeder department for areas that require more experienced workers. Some of the departments have experienced very little turnover, and have a group of people that have been located at the site for a significant time so their age is typically older. Table 3 shows summary statistics of ages of individuals who work in the departments sampled, and Figure 5 shows the distribution of ages.

Table 5

Distribution of Age of Individuals in Departments Sampled

Dept	n	Median	Range
H	68	49	22-59
F	20	46	38-55
C	62	39	22-62
M	215	43	19-64
S	150	42	22-62
T	122	43	23-65

Note. The sample size is the number of individuals who work in each department, not the number of individuals who completed the questionnaire.

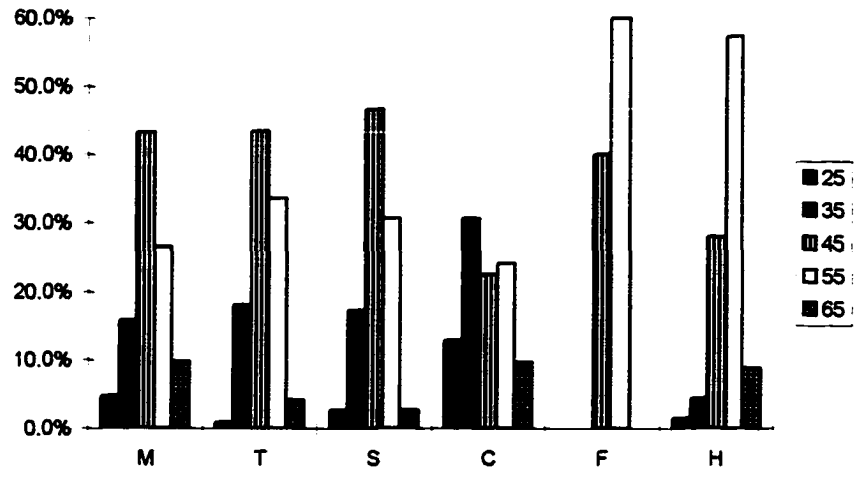

Figure 5. Histogram of ages of employees working in each of the departments sampled.

The distribution of years of service is skewed negatively for departments with a higher proportion of professional workers (F and H) because the site where the data were collected initiated its operation 27 years ago. The plant hired a significant number of people at that time who remain with the operation. The distribution of age of individuals in the manufacturing departments is typically bi-modal. This reflects the same phenomena of a significant number of hires as the plant started up, and a relatively high turnover rate of recent hires currently being experienced.

Table 6

Summary Statistics of Years of Service of Individuals in Departments Sampled

Dept	n	Median	Range
H	68	25	0-30
F	20	22	13-28
C	62	10	2-27
M	215	21	0-39
S	150	17	2-30
T	122	17	2-30

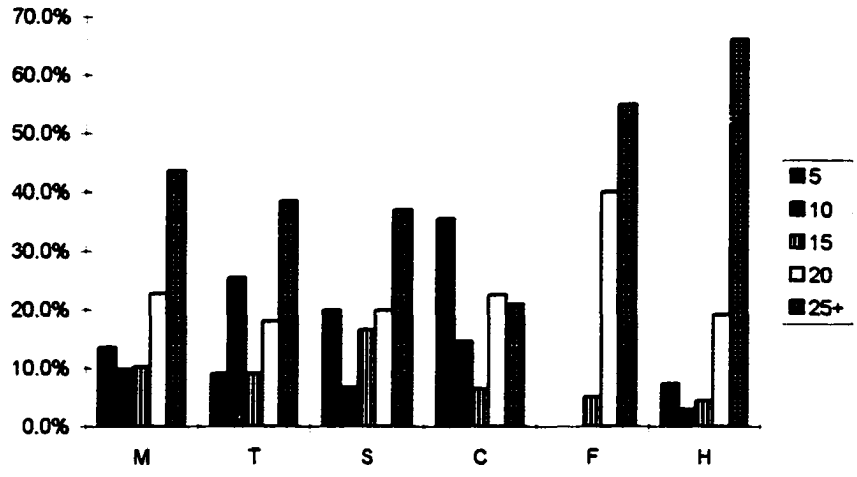

Figure 6. Histogram of years of service by department.

Gender is evaluated next. This work site is predominately male. Two of the professional departments (H and F) are staffed with a higher proportion of females than is typical of the rest of the plant. More recent hires to the site more closely match population demographics of men and women in the community, whereas individuals who were hired when the operation started are more typically male.

Table 7

Distribution of Gender of Individuals in Departments Sampled

Dept	n	Percent Male	Percent Female
M	68	81%	19%
T	20	71%	29%
S	62	73%	27%
C	215	79%	21%
F	150	40%	60%
H	122	59%	41%

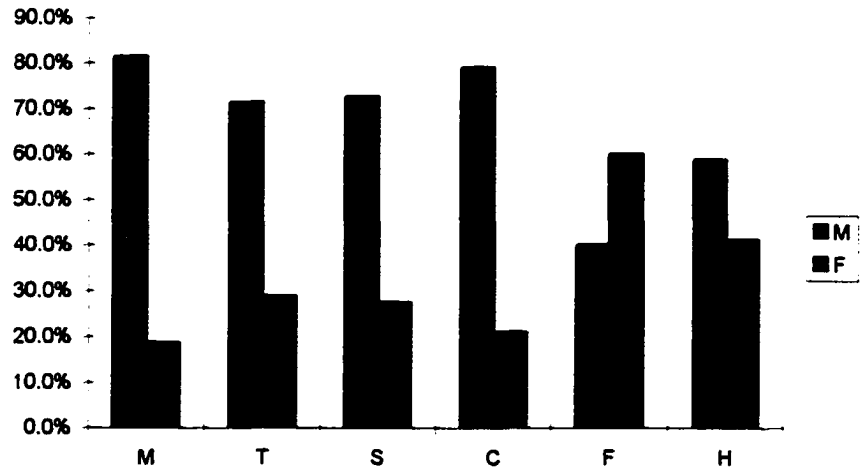

Figure 7. Histogram of percent gender by department.

Education is evaluated next. Employees at the site can be classified into two major job categories. Technical staff are typically people with college degrees, and manufacturing departments are typically staffed by people with high school degrees. The professional departments in this survey are supported by clerical labor that typically do not have college degrees.

Table 8

Distribution of Education of Individuals in Departments Sampled

Dept	n	Percent College	Percent High School
M	68	9%	91%
T	20	16%	84%
S	62	3%	97%
C	215	2%	98%
F	150	65%	35%
H	122	25%	75%

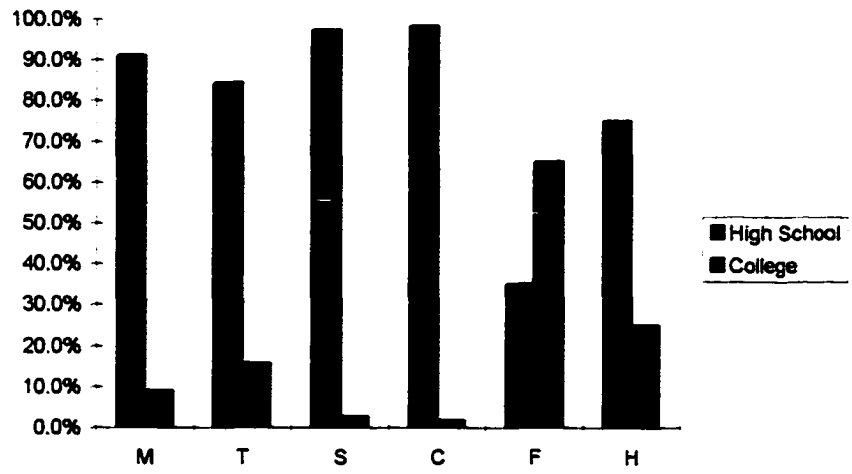

Figure 8. Histogram of education level by department.

The site has experienced several reductions in force in the last decade. The products manufactured at the site compete in a mature market. There was significant pressure to cut costs to remain competitive in the marketplace. There was no reduction in force planned at the time this research was conducted. However, a significant reduction took place the year prior.

Analysis

The questionnaire was composed of 38 items that used a 1-5 Likert scale. The dimensions of empowerment, self efficacy for teamwork, inclusion and change were calculated by averaging the responses to the items identified to measure each dimension. Eleven of the questions were worded where a 5 response would indicate strong disagreement instead of strong agreement, and a 1 response would indicate a strong agreement instead of a strong agreement. The transformation of 6-X, where X is the result from the survey, was used on these questions so that a 5 response indicated strong

agreement on all questions, and a 1 indicated strong disagreement on all responses. Table 7 shows the questions that were used to estimate each of the dimensions of interest.

Table 9

Questions from the Questionnaire Used to Calculate Dimensions

Dimension	Formula
Empowerment	Q13 - Q24
Inclusion	Q9 - Q12
Teamwork	Q1 - Q8
Change	Q25 - Q38

Note. Questions 4, 7-12, 29, 32, 35 and 37 were posed in the negative and were adjusted by subtracting the response from 6.

Summary Statistics of Dimensions

Each dimension was calculated for every participant in the study. The distribution of responses are shown in the tables below. Summary statistics of the responses for each of the dimensions described were estimated for each department, and over all departments.

Empowerment had a minimum departmental composite response of 2.17, and a maximum of 4.92. The median response was 3.83. A 95% confidence interval for the mean response is (3.70 - 3.91). The distribution of the data in aggregate were approximately normal using the Shapiro-Wilk W test.

Table 10

Distribution of Empowerment

Dept	n	Mean	SD	95% CI for Mean	Median	Range
H	16	4.26	.35	4.07-4.44	4.21	3.5-4.83
F	20	3.54	.59	3.26-3.82	3.54	2.12-4.58
C	11	3.87	.59	3.47-4.27	3.92	2.67-4.75
M	29	3.79	.56	3.57-4.00	3.75	2.67-4.83
S	30	3.82	.46	3.65-3.99	3.83	2.92-4.92
T	10	3.53	.62	3.09-3.98	3.42	2.75-4.5
All	116	3.80	.56	3.70-3.91	3.83	2.17-4.92

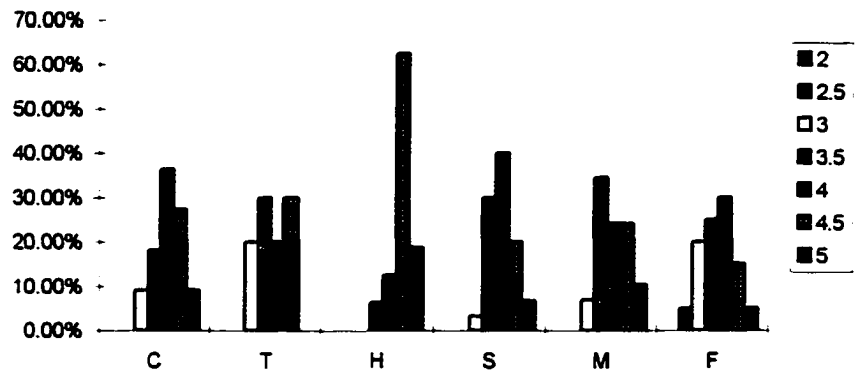

Figure 9. Distribution of empowerment by department.

Self efficacy for teamwork had a minimum departmental composite response of 2.63, and a maximum of 5.0. The median response was 3.75. A 95% confidence interval for the mean response is (3.71 - 3.93). The distribution of the data in aggregate were not statistically normal.

Table 11

Distribution of Teamwork

Dept	n	Mean	SD	95% CI for Mean	Median	Range
H	16	4.07	.46	3.82-4.32	4.00	3.00-4.75
F	20	3.73	.51	3.49-3.97	3.75	2.75-4.5
C	11	4.18	.71	3.70-4.66	4.5	3.00-5.00
M	29	3.86	.69	3.59-4.12	3.75	2.88-5.00
S	30	3.63	.57	3.41-3.84	3.63	2.62-4.63
T	10	3.66	.46	3.33-3.99	3.50	3.13-4.50
All	116	3.82	.61	3.71-3.93	3.75	2.63-5.00

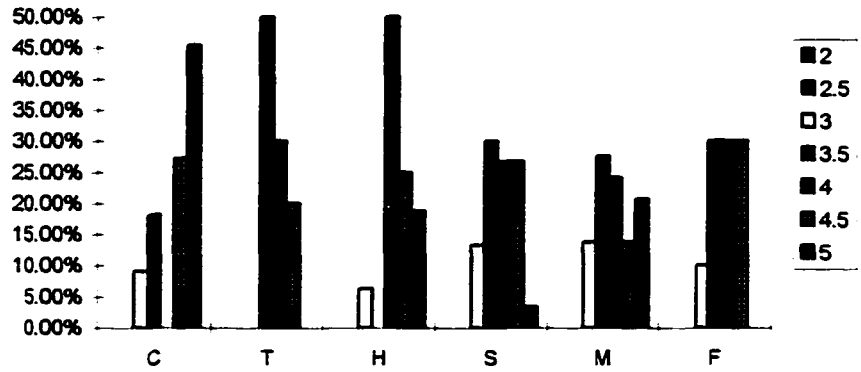

Figure 10. Distribution of teamwork by department.

Change had a minimum response departmental composite response of 1.86, and a maximum of 4.79. The median response was 3.5. A 95% confidence interval for the mean response is (3.43 - 3.61). The distribution of the data in aggregate was not statistically different from normal.

Table 12

Distribution of Change

Dept	n	Mean	SD	95% CI for Mean	Median	Range
H	16	3.78	.27	3.63-3.92	3.86	3.29-4.14
F	20	3.55	.52	3.31-3.80	3.39	2.71-4.64
C	11	3.65	.38	3.39-3.91	3.71	2.92-4.21
M	29	3.42	.61	3.18-3.65	3.43	1.86-4.79
S	30	3.46	.41	3.31-3.62	3.50	2.79-4.43
T	10	3.37	.67	2.89-3.85	3.14	2.36-4.43
All	116	3.52	.50	3.43-3.61	3.50	1.86-4.79

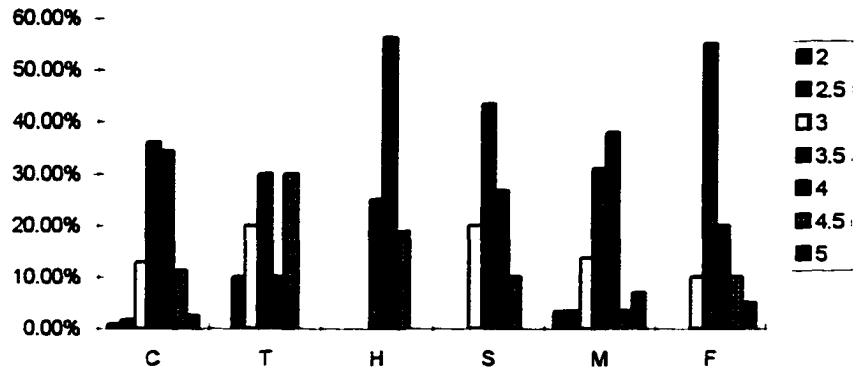

Figure 11. Distribution of change by department.

Inclusion showed the greatest differentiation of all the instruments used, and had a minimum departmental composite response of 1.00 and a maximum of 4.75. The median response was 3.25. A 95% confidence interval for the mean response is (3.05 - 3.36). The distribution of the data in aggregate were statistically not normal.

Table 13

Distribution of Inclusion

Dept	n	Mean	SD	95% CI for Mean	Median	Range
H	16	3.39	1.02	2.84-3.93	3.63	1.25-4.50
F	20	3.16	.91	2.74-3.59	2.88	1.75-4.75
C	11	3.54	.80	3.01-4.08	3.50	2.50-4.75
M	29	3.11	.62	2.88-3.35	3.00	1.75-4.25
S	30	3.23	.78	2.94-3.52	3.25	1.75-4.50
T	10	2.80	1.25	1.90-3.69	3.00	1.00-4.50
All	116	3.20	.85	3.05-3.36	3.25	1.00-4.75

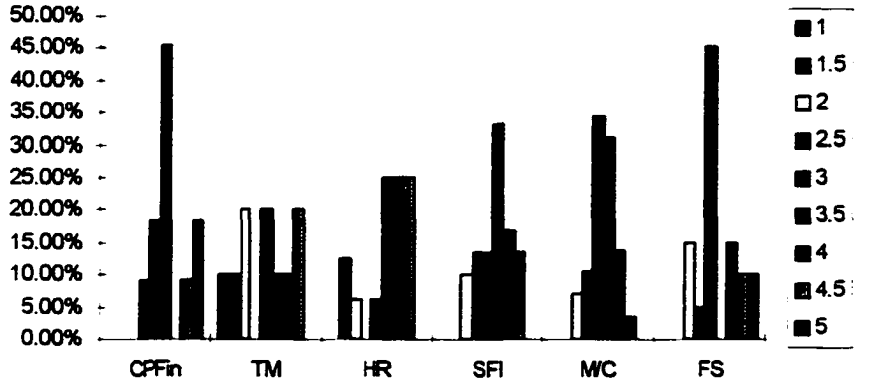

Figure 12. Distribution of inclusion by department.

The dimension of natural support was estimated by completing an interview with department supervision about six randomly selected individuals from each department included in the survey. Responses of the questions for each of the six individuals evaluated was averaged and the average was associated with every individual response within each department.

Table 14

Distribution of Natural Supports

Dept	Mean
H	4.71
F	4.05
H	4.05
M	4.10
S	4.43
T	3.86
All	4.20

Note. The mean of each department is weighted by the number of individual questionnaires completed in each department.

Differences of Dimensions Between Departments

An Analysis of Variance tested whether empowerment, teamwork, inclusion, change and natural supports were the same for each of the departments. The analysis summarized in Table 15 showed that empowerment and teamwork were not the same across all of the departments, and that there was not a statistically significant difference between departments for change, inclusion and natural support. Table 16 identifies the statistically significant contrasts between departments for empowerment and teamwork.

Table 15

Analysis of Variance for Dimension Differences Between Departments

Dimension Source	df	Sum of Squares	Mean Square	F-Ratio	p-value
Empowerment					
C. Total	115	35.933810			
Model	5	5.431331	1.08627	3.9174	.0026
Error	110	30.502479	.27730		
Teamwork					
C. Total	115	42.095282			
Model	5	4.002531	.800506	2.3116	.0487
Error	110	38.092751	.346298		
Change					
C. Total	115	29.241556			
Model	5	1.872351	.374470	1.5050	.1941
Error	110	27.241556	.254174		
Inclusion					
C Total	115	83.824892			
Model	5	3.777208	.755442	1.0381	.3990
Error	110	80.047684	.727706		
Natural Support					
C. Total	35	14.337868			
Model	5	2.950113	590023	1.5544	2032
Error	30	11.387755	.379592		

Table 16

Tukey-Kramer Honest Significant Difference (HSD) Analysis for Significant Effects

Dimension	Department	Mean	Difference	HSD
Empowerment	H	4.2552		
	F	3.5418	.7134	.5123
	H	4.2552		
	T	3.5333	.7219	.6157
Teamwork	C	4.1818		
	S	3.6274	.5544*	.6017
	H	4.0703		
	S	3.6274	.4429*	.5284

Note. The contrasts displayed for teamwork did not show a significant difference at the 5% level even though the Analysis of Variance was significant. The contrasts shown were the closest to being significant.

Assumptions

Departments were chosen for the research purposefully to attempt to differentiate departments according to the levels of natural support and inclusion. The researcher expected to see greater differentiation between departments. The average level of inclusion is plotted against the average level of natural support for each department in the scatter plot below. The natural support instrument and the inclusion instrument did not demonstrate the ability to differentiate as expected, or the departments were homogeneous in respect to these two dimensions.

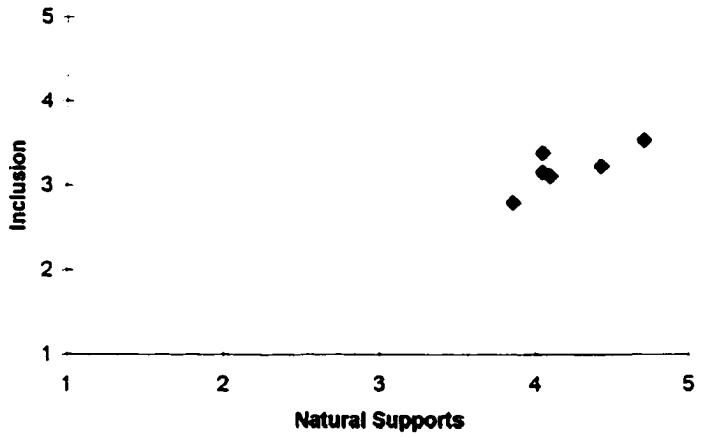

Figure 13. Levels of inclusion and natural support realized in the research.

Correlation of Dimensions Measured

This part of the analysis explored relationships between each of the dimensions measured. This was done in aggregate and by department. Two analyses are shown. The first analysis is a scatter plot that shows the relationship between each of the variables for each of the departments, and then for all of the departments together. This scatter plot has a 95% bivariate density ellipse imposed on the plot. A 95% density ellipse would cover approximately 95% of the points assuming the underlying distribution of the data is bivariate normal and the sample size is fairly large. This imposed plot is useful to explore the strength of relationship between variables. When the ellipse is fairly round, there is low correlation between the two variables. Correlation between the variables is higher when the density ellipse has a diagonal orientation.

The second analysis is a table that shows the Pearson product-moment correlation coefficient for each pair of variables with the p-value from a test of the null hypothesis that the correlation is 0.

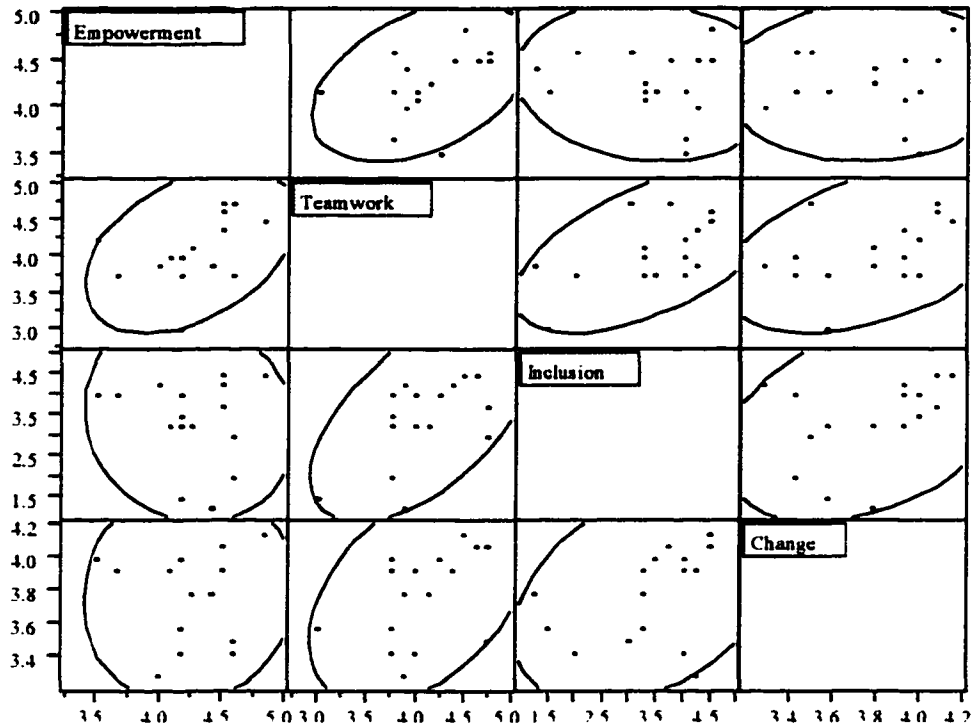

Figure 14. Scatter plot matrix of variables in model for Department H.

Table 17

Correlation of Model Variables for Department H

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.5601	16	0.0241
Empowerment	Teamwork	0.4109	16	0.1138
Empowerment	Inclusion	-0.1167	16	0.6669
Change	Teamwork	0.4257	16	0.1002
Change	Inclusion	0.3733	16	0.1544
Change	Empowerment	0.0550	30	0.8396

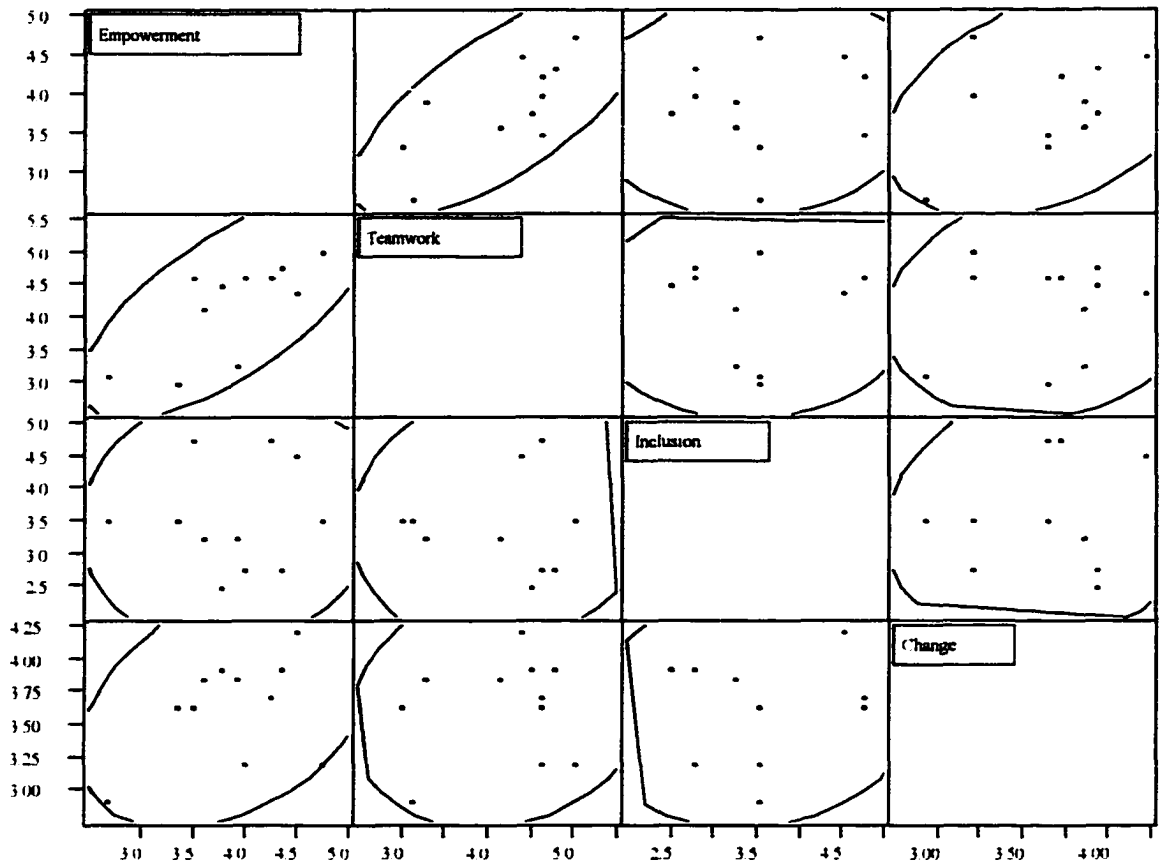

Figure 15. Scatter plot matrix of variables in model for Department C.

Table 18

Correlation of Model Variables for Department C

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.0828	11	0.8087
Empowerment	Teamwork	0.7096	11	0.0145
Empowerment	Inclusion	0.0797	11	0.8158
Change	Teamwork	0.1492	11	0.6614
Change	Inclusion	0.1214	11	0.7222
Change	Empowerment	0.3831	11	0.2448

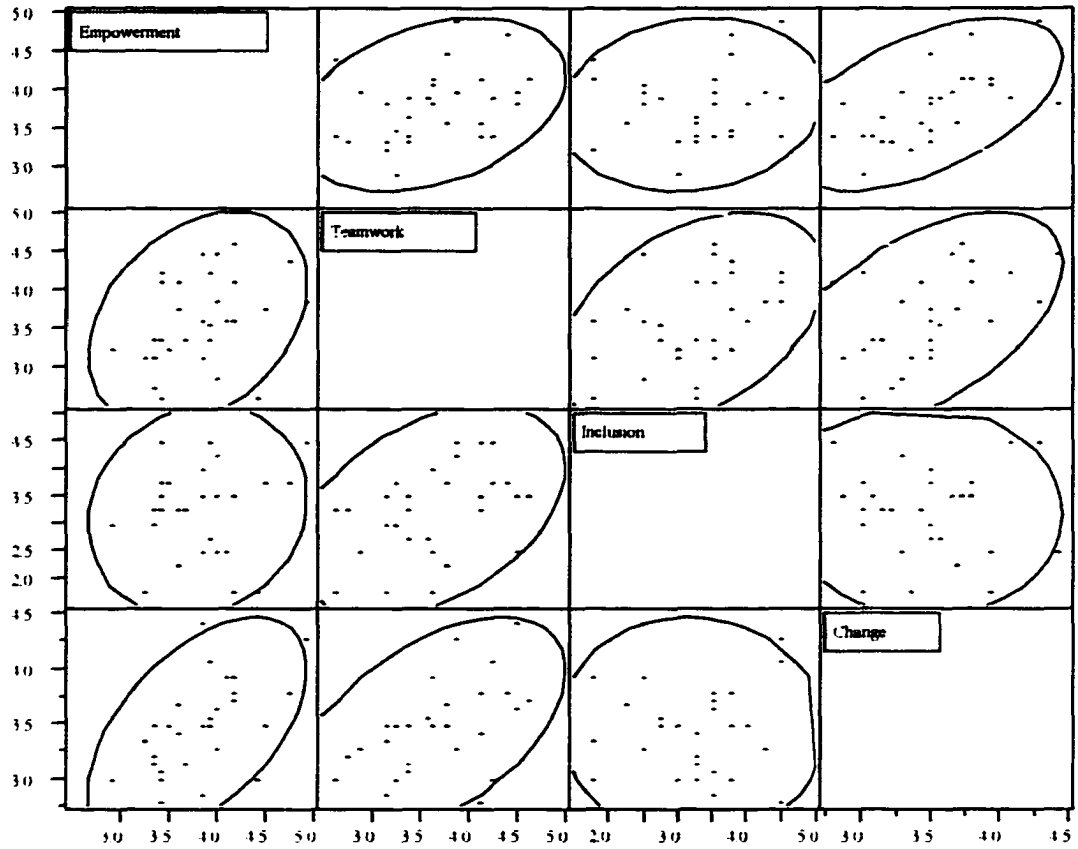

Figure 16. Scatter plot matrix of variables in model for Department S.

Table 19

Correlation of Model Variables for Department S

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.4152	30	0.0225
Empowerment	Teamwork	0.3358	30	0.0696
Empowerment	Inclusion	0.1271	30	0.5033
Change	Teamwork	0.5275	30	0.0027
Change	Inclusion	-0.0302	30	0.8743
Change	Empowerment	0.5440	16	0.0019

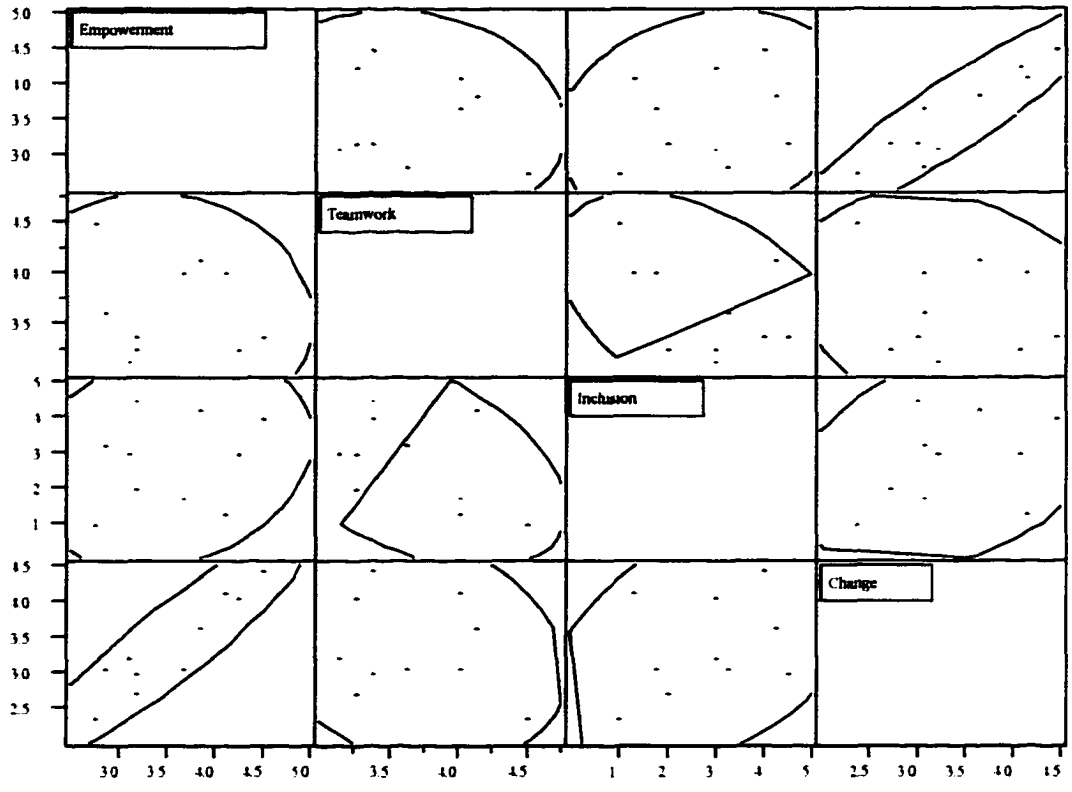

Figure 17. Scatter plot matrix of variables in model for Department T.

Table 20

Correlation of Model Variables for Department T

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	-0.4638	10	0.1770
Empowerment	Teamwork	-0.1300	10	0.7204
Empowerment	Inclusion	0.2042	10	0.5715
Change	Teamwork	-0.2432	10	0.4984
Change	Inclusion	0.3263	10	0.3574
Change	Empowerment	0.9196	10	0.0002

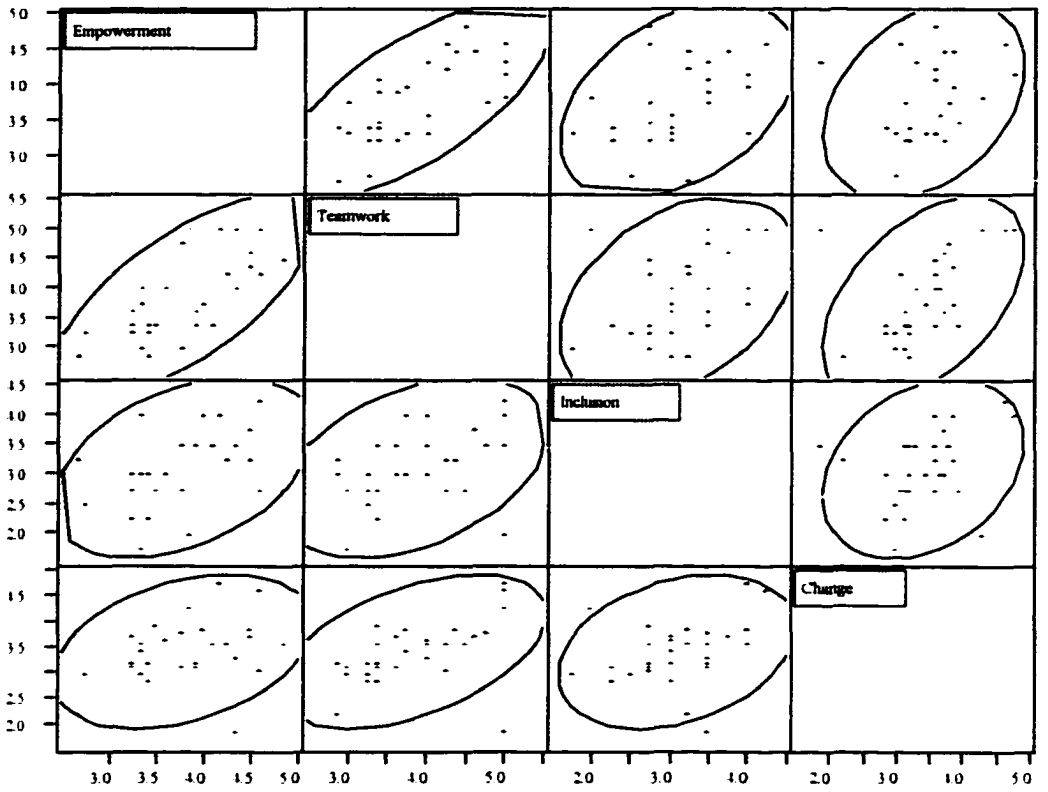

Figure 18. Scatter plot matrix of variables in model for Department M.

Table 21

Correlation of Model Variables for Department M

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.4031	29	0.0301
Empowerment	Teamwork	0.6973	29	0.0000
Empowerment	Inclusion	0.4071	29	0.0284
Change	Teamwork	0.4889	29	0.0071
Change	Inclusion	0.3068	29	0.1055
Change	Empowerment	0.3572	29	0.0572

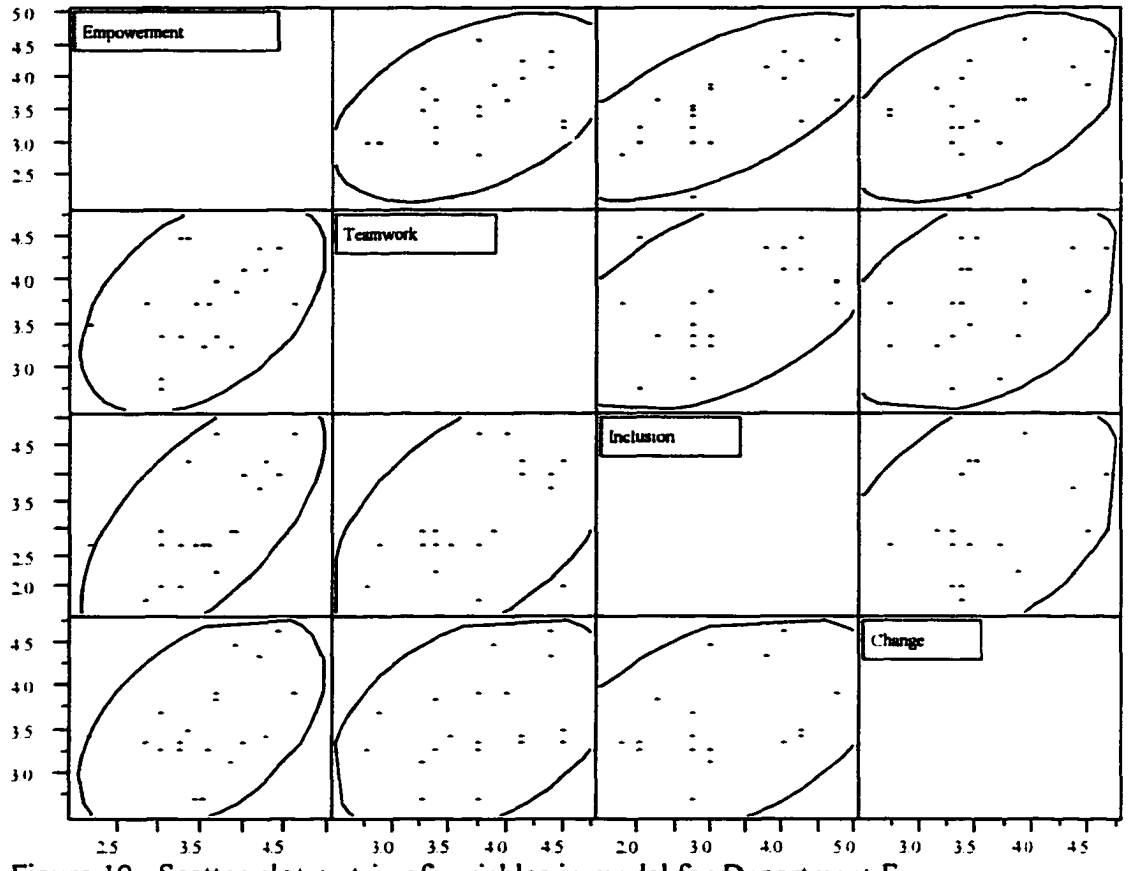

Figure 19. Scatter plot matrix of variables in model for Department F.

Table 22

Correlation of Model Variables for Department F

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.4954	20	0.0264
Empowerment	Teamwork	0.4445	20	0.0495
Empowerment	Inclusion	0.6485	20	0.0020
Change	Teamwork	0.3857	20	0.0930
Change	Inclusion	0.4009	20	0.0798
Change	Empowerment	0.4726	20	0.0354

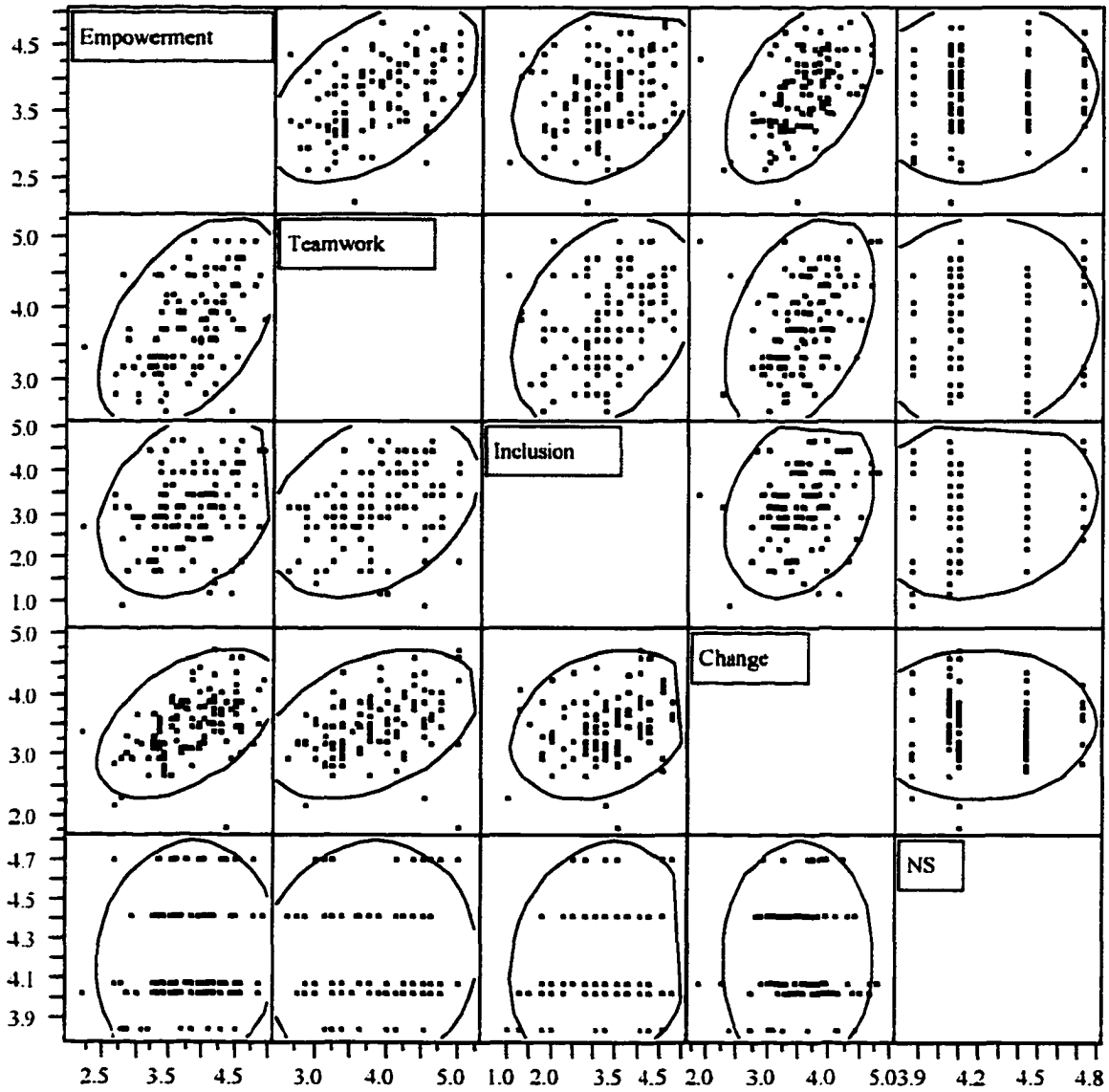

Figure 20. Scatter plot matrix of variables in model for all departments.

Table 23

Correlation of Model Variables for All Departments

Variable	by Variable	Correlation	Count	Signif Prob
Inclusion	Teamwork	0.3217	116	0.0004
Empowerment	Teamwork	0.4953	116	0.0000
Empowerment	Inclusion	0.2936	116	0.0014
Change	Teamwork	0.3949	116	0.0000
Change	Inclusion	0.2634	116	0.0043
Change	Empowerment	0.4887	116	0.0000
Natural Spt	Empowerment	0.0745	116	0.4270
Natural Spt	Teamwork	0.0480	116	0.6092
Natural Spt	Change	0.0303	116	0.7470
Natural Spt	Inclusion	0.1452	116	0.1198

This summary shows that all variables are significantly correlated when compared one at a time in aggregate across all departments (Table 23).

Tables 17 through 22 showed differences in statistically significant correlations when examined by department. The correlation coefficient was statistically significant at the 5% level when inclusion was correlated with teamwork for departments H, S, M and F. Empowerment and teamwork were significant at the 5% level for departments C, M and F. Empowerment and change were significant at the 6% level for departments F, S, T and M. Teamwork and change were significant at the 5% level for departments S and M. Inclusion and empowerment were significant at the 5% level for departments M and F.

Regression Analysis

The data has shown significant relationships between dimensions measured. The size of the effect of change, natural support, inclusion and teamwork on empowerment is explored in the next phase of the analysis. A hierarchical linear model was used to understand the impact that different departments may have had on the variables of interest.

Because the prior analysis showed significant differences between departments for the level of empowerment, the first step in this analysis was to take out the effect due to department differences. Empowerment was transformed by subtracting the difference between the average level of empowerment for each department from the overall average level of empowerment. The transformation is shown below:

$empowerment_{i,j}' = empowerment_{i,j} - (\overline{empowerment}_{j} - \overline{\overline{empowerment}})$. Calculated values of the delta are shown in Table 24.

Table 24

Transformed Values for Empowerment

Dept	Mean	Overall Mean	$\overline{empowerment}_{j} - \overline{\overline{empowerment}}$
H	4.26	3.80	.46
F	3.54	3.80	-.26
C	3.87	3.80	.07
M	3.79	3.80	-.01
S	3.82	3.80	.02
T	3.53	3.80	-.27

After transforming empowerment, the next step taken in this analysis was to standardize each of the dimensions. This was done to prevent the possibility of one of the dimensions showing a significant effect due to the average level and spread of the effect rather than the underlying impact of the dimension. Each dimension was standardized by subtracting the response from the overall mean of the dimension and then dividing by the standard deviation of the overall dimension ($STDx_{i,j} = (x_{i,j} - \bar{x}) / s_x$). A regression

analysis was performed on those standardized variables. The regression model tested is shown below with the results of the analysis displayed in Table 25

$$STDempowerment_{i,j} = \beta_0 + \beta_1 STDteamwork_{i,j} + \beta_2 STDchange_{i,j} + \beta_3 STDinclusion_{i,j} + \beta_4 STDteamwork_{i,j} * STDinclusion_{i,j} + \beta_5 STDteamwork_{i,j} * STDchange_{i,j} + \beta_6 STDinclusion_{i,j} * STDchange_{i,j} + \beta_7 department_j * STDteamwork_{i,j} + \beta_8 department_j * STDinclusion_{i,j} + \beta_9 department_j * STDchange_{i,j}$$

Table 25

Analysis of Variance for Regression Model Using All Standardized Variables and All Standardized Two-way Interactions

Source	df	Sum of Squares	Mean Square	F-Ratio	p-value	RSquare
C Total	115	115.0000				
Model	21	59.2121	2.8196	4.7509	<.0001	.5149
Error	94	55.7879	..5935			

The model was significant at the .0001 level. Table 26 shows the statistical significance of each effect.

Table 26

Effects Summary of Analysis of Variance for Regression Model Using Standardized Variables

Effect	df	Sum of Squares	F-Ratio	p-value
Std Teamwork	1	4.8885855	8.2370	.0051
Std Change	1	5.3564167	9.0253	.0034
Std Inclusion	1	.0217778	.0367	.8485
Std Teamwork*Std Inclusion	1	.6101792	1.0281	.3132
Std Teamwork*Std Change	1	1.3705123	2.3092	.1320
Std Inclusion*Std Change	1	1.6975222	2.8602	.0941
Department*Std Teamwork	5	5.7201508	1.9276	.0970
Department*Std Inclusion	5	6.6886349	2.2540	.0553
Department*Std Change	5	9.2448328	3.1154	.0120

Table 26 shows a department by change interaction and a department by inclusion interaction. This suggests the potential of the contribution of change and inclusion varying depending on the department. The department interactions were removed from the model to get estimates of the slopes of the significant factors of teamwork and change, then the residuals from this regression were correlated to change and inclusion to see if there were any significant effects.

After finding the significant effects from the initial analysis, the model was rerun with only the effects that were significant placed into the model. This analysis, displayed in Table 27, showed that each of the factors were still significant with a small loss in the coefficient of determination of the overall model. The effects of this model were tested in Table 28.

Table 27

Analysis of Variance for Regression Model of Standardized Empowerment Prime Using Only Significant Standardized Effects

Source	df	Sum of Squares	Mean Square	F-Ratio	p-value	RSquare
C Total	115	115.0000				
Model	3	37.1154	12.3718	17.7910	<.0001	.3274
Error	112	77.8846	..6954			

Table 28

Effects Summary of Analysis of Variance for Regression Model Using Significant Effects from Entire Set of Standardized Variables

Effect	df	Sum of Squares	F-Ratio	p-value
Std Teamwork	1	8.1731	11.7532	.0009
Std Change	1	12.8253	18.4431	<.0001
Std Teamwork*Std Change	5	2.6360	3.7907	.0540

All effects proved to be significant at the .054 level. Therefore, the underlying model used to estimate empowerment was:

$$empowerment_{i,j} = department_j + \beta_1 teamwork_{i,j} + \beta_2 change_{i,j} + \beta_3 department_j * change_{i,j} + \varepsilon_{i,j}$$

where $department_j$ repesented a unique intercept for department j.

This same analysis was run using the dimension of natural supports rather than department. Department proved to be a significant dimension, while natural support did not help in prediction in the model.

Parameter Effect Estimation

There was a significant effect of the department*change and department*inclusion interaction. To calculate the effects of the unique effect each department had on the slope of the dimension of change it was necessary to transform empowerment to take out the overall effect of change and teamwork. The residuals from the regression of $empowerment_{i.j}'$. empowerment with the department effect taken out, on actual responses of change and teamwork were used as the dependent variable in the regression on change for each department. The residual of this regression was calculated to be

$$empowerment_{i.j}'' = empowement_{i.j}' - (\varphi_0 + \varphi_1 * change_{i.j} + \varphi_2 * teamwork_{i.j} + \varphi_3 * teamwork_{i.j} * change_{i.j})$$

where $\varphi_0 = -1.56, \varphi_1 = 1.2649, \varphi_2 = 1.0540$ and $\varphi_3 = -.2278$ are the coefficients estimated from regressing change and teamwork on empowerment after the effect of departments is taken out.

The estimate of the effect of change*department was calculated by regressing change on *empowerment"* by each department, where

$$empowerment_{i.j}'' = (empowerment_{i.j}' - (-1.5840 + 1.2649 * change_{i.j} + 1.0540 * teamwork_{i.j} - .2279 * teamwork_{i.j} * change_{i.j}))$$

To determine which departments had a unique effect for change and inclusion, the significance of the effect of change on the transformed level of empowerment was examined and results are shown in Table 29.

Table 29

Significance of Change and Inclusion by Department

Dept	Source	Sum of Squares	F-ratio	p-value
H	Change	1.4640576	2.1690	.1629
F	Change	.0911825	.3511	.5609
C	Change	.0705585	.3709	.5576
M	Change	.1990810	1.0630	.3117
S	Change	.0357194	.2058	.6536
T**	Change	1.5672598	21.9166	.0016
H*	Inclusion	1.9328744	3.8019	.0715
F*	Inclusion	5.969243	5.4981	.0307
C	Inclusion	.0111937	.0106	.9204
M	Inclusion	1.027799	1.0238	.3206
S	Inclusion	.043437	.0465	.8308
T	Inclusion	.898150	.6809	.4332

Note: ** shows significance at the 1% level, and * shows significance at 7.5% level.

This analysis showed that only department T had change as a significant effect, and departments H and F had inclusion at a significant level. The resulting equation for the transformed level of empowerment on change for department T was estimated to be

$$empowerment_{i,j}'' = -2.0116 + .6198 * change .$$

Therefore, the resultant model is:

$$empowerment_{i,j} = (\overline{empowerment_j} - \overline{\overline{empowerment}})$$
$$-1.58 + 1.26 * change_{i,j} + 1.05 * teamwork_{i,j} - .23 * change_{i,j} * teamwork_{i,j}$$
$$+ (-2.0116 + .6198 * change_{i,j} (for..department..T))$$
$$+ (-.85 + .27 * inclusion_{i,j} (for..department..F))$$
$$+ (.25 - .12 * inclusion_{i,j} (for..department..H))$$

Summary

The analysis showed that teamwork and change influence the level of empowerment. Department T had a unique effect due to change, and all the other departments had a consistent effect from change. In departments H and F, inclusion had a unique effect and did not influence inclusion in the other departments. Inclusion was significant when examining the correlation against empowerment, but the size of the effect was negligible when the effect of teamwork and change were incorporated into the regression model.

The overall variability of empowerment was 1SD=.5590. After removing the effects due to different departments and the effects of change and teamwork, the variability was reduced to 1SD=.3947. Therefore, this regression explains $1-\frac{.3947^2}{.5590^2}$, or 50% of the variability seen in empowerment.

CHAPTER 5: DISCUSSION

This chapter will give a summary of how the research was designed and conducted. A discussion of the results from the research will examine the appropriateness of the instruments used in the research and the underlying theory used to formulate the research questions. In addition, the contribution each of the measured dimensions on empowerment is discussed. Finally, implications of the research and recommendations for future research complete the chapter.

Summary

This research was possible because of the researcher's access to the population of individuals sampled. The researcher has been employed by the company and has worked at the site where the research was conducted for the past 18 years. Familiarity with the site allowed not only access to individuals surveyed, but also provided insights into the overall culture of the site and the nuances of the culture in each of the departments.

This research attempted to examine the linkages between organizational results and the culture of the organization. Deming's framework of cooperation and learning to continuously improve the organization is predicated on an environment that is similar to the environment called for in the supported employment model. The supported employment model does not look specifically at organizational effects, and the Deming framework has not used the elements specifically identified in the supported employment model. This research examined the connection between the two frameworks.

The supported employment model was developed to ensure success of the individual in the workplace. Because the elements of this model support the level of empowerment in individuals, it may be said that the elements of the supported employment model also support organizational effectiveness. This implies that understanding and applying the supported employment model offers greater benefits to an organization than solely providing competitive work for a group of individuals.

Summary of Major Results

The analysis showed that self-efficacy toward teamwork and readiness for change were significant predictors of individual empowerment. Additionally, the effect of change was dependent on the department where the individual worked. Inclusion was statistically significantly correlated with empowerment explaining about 10% of the variability seen in empowerment, but was significant in the regression analysis for only two of the departments.

The level of empowerment was significantly different by department. There was a statistically significant correlation between empowerment and teamwork; empowerment and change; empowerment and inclusion; teamwork and change; teamwork and inclusion; and change and inclusion. These significant differences may or may not be of practical importance. All of these correlations were positive, so high responses to empowerment were coupled with high responses of teamwork, change and inclusion. The correlations of the independent variables in the study were all positive as well.

Discussion of Results

The model in Figure 21 shows the originally hypothesized relationship between empowerment and the elements of the supported employment model. Statistically

significant correlation coefficients between each of the variables are included in the figure. Note that the dimension natural support was not significantly correlated with any of the other dimensions.

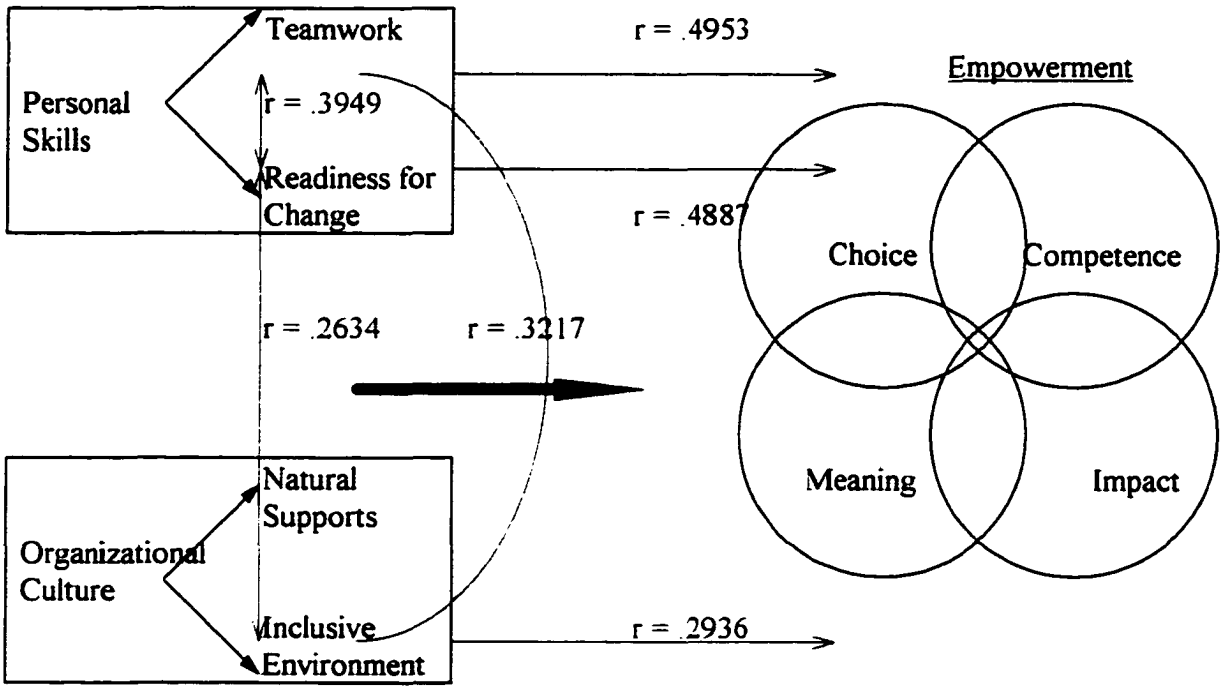

Figure 21. Originally hypothesized model of supported employment with estimates of the correlation between the variables in the model.

This model was not proven true with the empirical data from the study. Figure 22 shows another model derived from the empirical data in the research.

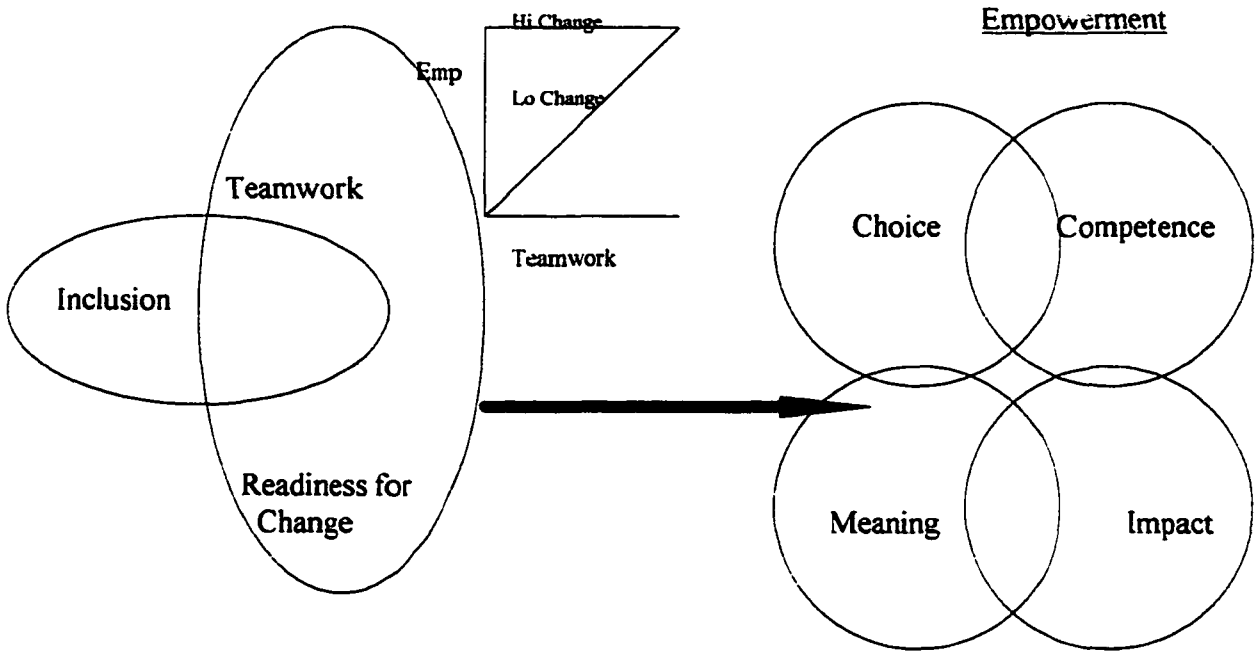

Figure 22. Revised model of supported employment with hypothesized effects.

This model does not include the dimension of natural support which proved to be statistically not significant in the empirical data. It also reflects the multicollinearity between the independent variables in the model. This model shows that there are not clearly differentiated dimensions of inclusion, teamwork and change. Instead, the model shows overlap between each of these dimensions as they relate to empowerment. Change and teamwork are significant predictors from the regression analysis, and inclusion was significant only for two departments. When change and teamwork were deleted from the analysis, inclusion was a significant predictor of empowerment. However, there are significant relationships between inclusion and the dimensions of change and teamwork. The model continues to show a strong relationship between the independent variables and the construct of empowerment.

Why the models are different will frame the remainder of the discussion of the results of this research. Two possible scenarios are discussed that may explain the difference between the models represented in Figure 21 and Figure 22. The first scenario is that the instruments used in the research measured the constructs of interest accurately. Therefore the underlying theory of the model in Figure 22 is invalid. The second scenario is that the underlying model represented in Figure 22 is accurate, but the instruments did not adequately measure the constructs of interest.

All of the variables measured in the research are examined to understand the relationship of each dimension to empowerment. Interactions of variables were investigated to look for further clues into relationships. However, only one of the interactions, teamwork*change proved to be significant. Each dimension was examined separately in light of the two scenarios.

Teamwork

The construct of teamwork was unique in this analysis because it appears to support the hypothesized theory and had a "good" instrument to measure the construct. Teamwork was positively correlated with empowerment, so high levels of teamwork imply high levels of empowerment. The average level of teamwork depended on the department. Department S was significantly different from departments C and H. Teamwork also proved to be a significant predictor in the regression analysis that looked at all of the dimensions concurrently.

The instrument to measure teamwork estimated an individual's self-efficacy for teamwork (Eby & Dobbins, 1997), i.e., a person's affinity toward working in groups. Teamwork, specifically social skills as identified in the supported employment literature, is

viewed as a critical skill in the supported employment model to make the person successful on the job. Thomas and Tymon (1997) showed that the construct of empowerment included a sense of collaboration and a sense of caring in the workplace. Self-efficacy for teamwork supports these constructs.

It is interesting to note that the contribution of teamwork toward empowerment was consistent across all departments. The departments were selected with the intent of collecting data in different cultural settings. It appears that people with an affinity to working together will do so in a range of cultures, and the positive relationship to empowerment may be present regardless of the culture of the department.

Organizations that have effective teams are intuitively more effective as organizations. The literature review showed that teamwork possessed common themes of having a sense of community and trusting others in the team. This study has shown a strong relationship between self efficacy toward teamwork and empowerment.

Readiness for Change

Change was also a significant effect in the regression model to predict empowerment. Change and empowerment had a positive correlation implying that high levels of change were consistent with high levels of empowerment.

Hanpachern (1997) noted that the instrument to measure readiness for change had three underlying constructs which were necessary preconditions for change to be supported. These included promoting change, participating in change, and level of resisting change. These constructs are intuitively related to Thomas and Tymon's (1997) construct of empowerment where one dimension, meaningfulness was enhanced by creating an exciting vision and progress with continuous improvement.

There was a significant change*teamwork interaction. When readiness for change was high, the overall level of empowerment was high and teamwork did not inhibit or enhance empowerment. When readiness for change was low, the level of empowerment depended on the level of teamwork. When change was low and teamwork was low, empowerment was low. When change was low and teamwork was high, empowerment was high. This shows two ways to affect empowerment. High readiness for change yields high empowerment. If readiness for change is low, then teamwork needs to be high to get high empowerment.

The contribution of change was not consistent for all of the departments. The effect of change was slightly more positive in department T than in the other departments which had a consistent effect for change on empowerment. Because one department has a different effect from change, it suggests the possibility that there may be another factor in play that is influencing empowerment. This is significant because it suggests that there may be an unexplained dimension that has not been included in the model.

It is interesting to note that when only the dimension of change was used in the regression analysis on empowerment, all departments except department H which had a significant positive effect on empowerment. That is, when readiness for change was low, empowerment was low, and when readiness for change was high, empowerment was high. However, in department H, the relationship of readiness for change and empowerment were insignificant. Therefore, readiness for change had no relationship with empowerment, empowerment was high for all levels of readiness for change. This illustrates a potential additional effect that was not considered in the analysis. The distribution of ages of individuals in department H was higher, and the level of education

of individuals was typically higher than individuals in the other departments. One of these demographic variables may influence the level of empowerment.

Inclusion

The correlation coefficient of empowerment and inclusion was statistically significant, but lower than the correlation of empowerment with teamwork or change. About 10% of the variability in empowerment could be explained by the level of inclusion. Inclusion proved to be significant in the regression model for only two departments, H and F. However, when teamwork and change were deleted from the regression analysis, inclusion was significant.

Interestingly, the effect of inclusion was positive for department F and negative for department H. The demographics of the two departments were similar making those effects an improbable reason for seeing the difference. The different effect of inclusion reinforces the potential of another unmeasured variable influencing empowerment.

The revised model in Figure 23 shows a potential explanation of these results. Belsley, Kuh, and Welsch (1980) note that when multicollinearity exists in the independent variables of a regression model, the significance of one of the factors can wash out and not be significant. This multicollinearity is evidenced by the correlation of inclusion and teamwork (r=.3217) and inclusion and change (r=.2634). These correlations are as strong as the correlation that inclusion has with empowerment.

Inclusion is a statistically significant predictor of empowerment, but the effect of inclusion did not show up as a variable affecting all departments in the regression potentially because of the multicollinearity issues. The instrument used to measure inclusion measured how groups differentiate themselves by their proximity and their

interactions (Larkey, 1996). Inclusive groups offer up opportunities for interaction and information sharing, where exclusive groups inhibit those opportunities. In Thomas and Tymon's (1997) definition of the empowerment construct of competence, having noncomparative evaluations and positive reinforcement, and creating collaborative, noncynical, caring environments are important. This is consistent with an inclusive environment. That should uphold the theory that inclusion supports empowerment.

As a potential explanation, job security has been an issue in recent history in the organization where the research took place. If a hierarchy of needs in organizations that is similar to what Maslow (1991) proposed exists in human beings, the job security issues may have created an environment where people are less concerned with others than they are with themselves. This could lead to an environment where individuals are less willing to share access and information with others. This comment becomes more pertinent when considered in light of diversity goals present in the organization, i.e., getting a greater number of women and minorities promoted into higher level positions. That may be a cause of inclusion having a lower contribution to predicting empowerment.

The construct of inclusion was measured using 4 items from the questionnaire. It may be problematic to estimate the level of inclusion in an organization using only a questionnaire. The environment that supports inclusion might be better captured using a qualitative paradigm of research. Further differentiation between departments may be possible using an open ended instrument to capture the level of inclusiveness in each of the departments. This can be done using interview questions to gauge the level of support for the construct of interest. In addition, brainstorming dimensions that represent the

construct of interest and then using checksheets to capture the presence or lack of presence of these dimensions can facilitate the ability to quantify a fuzzy construct.

Natural Supports

Natural support was not a significant predictor of empowerment. The range of the value of natural support was smaller than what the researcher expected to see in the data. This may explain the lack of significance with the other dimensions used in the research.

The concept of natural support in the supported employment model has become a prominent issue in the literature. The original supported employment model included a job coach to facilitate transition into competitive work. Presence of a job coach was recognized to potentially prohibit successful integration into the workplace (Nisbet & Hagner, 1988). Nisbet and Hagner went on to note the desirability of natural supports by offering that informal interactions are typical and flourish in the workplace, that those patterns of interaction vary widely, and that supports are available naturally in the workplace. For that reason, individuals using the supported employment model should utilize those supports.

Natural supports are more effective than non-natural supports because of the actual act of support and the need for support (Rogan, 1966). Levels of support should accommodate whatever the need is for a specific point in time. Butterworth, et. al. (1996) believe that natural support is closely linked to social inclusion. Therefore, the lack of correlation of any of the dimensions with natural supports was surprising.

Natural support as a construct is a critical component of the supported employment model. Test and Wood (1996) thought that the concept of supported

employment should be replaced by the concept of natural support. For that reason, the lack of a significant correlation with empowerment was disconcerting to the researcher.

Mank (1996) believed that the only way to study natural support is to look at two organizations; one with natural supports present and the other with low levels of natural support. The lack of significance of natural support on empowerment in the research may be due to a lack of differences of level of natural support between departments. This dimension measures the presence of physical and social integration and interaction in the workplace and outside of the workplace. If all the departments were similar, then it may not have been possible to see the differentiation required to produce a statistically significant relationship.

Another possibility for the dimension of natural support lacking a significant contribution toward predicting empowerment may be the fact that the instrument was not appropriate in a typical setting. McNair and Rusch (1992) developed the instrument to evaluate the level of natural support in a supported employment setting. They suggested that the instrument could be used to evaluate a potential employment setting for the level of natural support. When using the instrument, the researcher's sense was that it did not differentiate the departments that were selected for the sample.

A final criticism of the way the natural support instrument was used in this research is the way that the data were collected. A random sample of six individuals from the department was selected and the researcher interviewed their supervision. An average of the six individuals was calculated and that result applied to each individual in the department. This was done for ease of sampling and an effort to minimize the researcher's need to gather specific information about individuals. In retrospect it would have been

beneficial to gather information on each individual who completed the survey in an attempt to further differentiate the data.

It is possible that the construct of natural support does not influence the level of individual empowerment, and that is the reason for lack of significance of the dimension in the research. However, the lack of a measure of natural support for each individual coupled with the appropriateness of the instrument in a typical work environment present significant issues. It is this researcher's belief that these impediments are the reason for lack of significant correlation rather than the generalized construct of natural support not influencing empowerment. There are too many theoretical links in the literature to assume that natural support would not support the construct of empowerment.

Implications

A significant relationship between elements of the supported employment model and empowerment was found. This suggests the possibility of a superordinate model that reflects the importance of including disenfranchised people in typical environments. This model may offer support in ways to embrace all individuals into organizations and include them in productive roles.

A significant implication of this research is that supported employment research has a lot to offer organization development research. Aligning these fields may offer a synergy that will enable better understanding and ability to measure constructs like natural support and inclusion. Because many of the constructs of the organizational culture are fuzzy and difficult to quantify, more empirical work is necessary to determine if the desired constructs exist in workplaces of interest.

One of the components of the originally conceived supported employment model was the job search. Soliciting employment opportunities for people using the model required convincing potential organizations of the benefits of employing supported employment candidates. This research shows that the supported employment model enhances overall performance of the organization. This is demonstrated by the relationship of the elements of the supported employment model to the construct of empowerment.

Empowerment can be argued to be a surrogate for organizational effectiveness. Hackman and Oldham (1976) first showed the favorable impact of job design on organizational productivity. An important component of their model was the concept of critical psychological states of the individuals studied in the model. Their research was verified by a meta-analysis done by Fried and Ferris (1987). This work showed the necessity of the presence of a set of critical psychological states for the job design to support greater productivity. The critical psychological states were examined and used as a basis to further develop and extend the construct of empowerment (Tymon, 1988; Thomas & Velthouse, 1990; Thomas & Tymon, 1993, 1997). Therefore, empowerment as manifested in the critical psychological states is an important precursor to organizational effectiveness.

Supporting an organizational culture that has been shown to be best practice for supporting people with disabilities in the workplace is the right culture to put in place for all individuals in the workplace. Rusch and Hughes (1996) highlight the fact that people with disabilities are more like typical people than not.

This research hinted at the importance of inclusion in organizations. There is theoretical support for the presence of inclusive environments in organizations. This research has shown empirical support for an inclusive environment, albeit with a small effect Inclusion is not mere presence in an organization. Inclusion represents significant interaction with access to people and information in organizations. Because inclusion supports empowerment, it is necessary to do more than create positions for people from diverse backgrounds. Genuine access is required to realize the benefits that this research suggests an inclusive environment may offer to organizations.

Sherif and Sherif (1965) noted that the way to get past group bias is to create superordinate goals that people from diverse groups can pursue. For inclusion to happen in an organization, an important piece of work will be for the leaders of the organizations to create a meaningful vision of what the organization is trying to accomplish. This would support getting past exclusive environments and help create inclusive communities at work that would support empowering individuals who work in the organization.

Teamwork was measured as self-efficacy for teamwork. This construct was highly correlated with empowerment. Empirical evidence to support teamwork is consistent with the literature. Self-efficacy for teamwork supports the concept of the necessity of soft skills in the workplace as well as the technical competencies required to do the work. Self efficacy is typically present in individuals who have had previous positive experiences (Bandura, 1977). Bandura goes on to say that exhortations that suggest people can work well together do not present as strong a contribution for self-efficacy. Because self-efficacy toward teamwork has been shown to contribute to individual empowerment, to realize this positive effect would require positive experiences in team environments. This

suggests the need to be diligent in supporting and training team structures. Lack of significant support would not create the environment needed to create self-efficacy for teamwork.

Rusch & Hughes (1989) noted the importance that social skills would play in existing jobs using the supported employment model. He went on to suggest that social skills also need to be appropriate for future job roles. This suggests that a one time course on teamwork may not fully meet the needs of an organization to believe in their ability to perform well as teams. Ongoing interventions may be required to fully support team concepts.

Change was estimated using an instrument that measured readiness for change. This construct measured three dimensions of change: promoting change, participating in change, and resisting change. Because this construct was highly correlated with empowerment it presents an opportunity to positively influence the level of empowerment. Because change is viewed as a new constant that all organizations need to deal with, understanding and adapting to change has become a popular subject in the business literature. This research highlights the need for organizations to develop an individual's capacities to support and participate in change, and not just invoke change on individuals.

One of the dimensions of change was an individual's willingness to promote change. Fullan (1993) advocated connecting with the environment outside of the organization to facilitate understanding the need for change. Because this research has shown that readiness for change is linked to empowerment, efforts to connect people with the environment outside of traditional boundaries may yield benefits to empowering the workforce.

Pallas (1993) noted that without sufficient support, individuals going through change suffer from role overload and are not optimally effective. It is apparent that programs that support individuals in their personal lives may also offer benefits for personal empowerment.

Recommendations for Future Research

Resolving the conflict of the two scenarios presented earlier in this chapter is key for future research. Understanding how to empirically quantify the constructs of natural support and inclusion will certainly support understanding the effect of using the supported employment model in organizations. These constructs are often cited as critical elements of organizational culture, and need to be adequately measured.

The other scenario presented earlier addresses the validity of the underlying theory. Potential for an unknown key construct, or plethora of constructs to adequately capture significant predictors of empowerment would help to know what interventions managers of organizations should make. A factor analysis of many different variables measuring all potential dimensions might highlight some key variables that would favorably influence empowerment and that are currently unknown.

This research showed that the elements of supported employment facilitate organizational effectiveness with the exception of the element of natural support. Measuring natural support adequately may require more than a questionnaire. Further research is required to understand the effect of natural support in a typical workplace. Some qualitative data collection would be required to gain an appropriate representation of natural support.

There is a debate underway that is asking whether an operational definition of natural supports should even be pursued (Rusch & Hughes, 1996). Gaining an understanding of a qualitative look at how natural supports are demonstrated in typical work environments may yield insights into ways to make natural supports work in a supported employment model. This research could be done using Mank's (1996) suggestion of finding two organizations that differ dramatically in the level of natural support, assuming natural support can be measured. and determine differences in organizational effectiveness.

Butterworth, et. al. (1996) suggest research is needed to understand the cultural effects of an organization on the presence of inclusion and natural supports. Extending the concept of contrasting the level of empowerment in organizations with differing levels of inclusion and natural supports might develop insights into ways to make organizations more effective.

Understanding the construct of empowerment, particularly how the four elements of empowerment inter-relate, will offer insights into ways to better empower individuals in organizations. The question of the ability of the instrument to differentiate choice, competence, meaning and impact has been addressed and verified (Thomas & Velthouse, 1990). Determining which of these elements are most critical to empowerment would offer more insights into potential interventions to improve the workplace.

The model tested was developed using the researcher's synthesis of the supported employment model. One of the limitations was that the model identified was not exhaustive in finding all the elements of the supported employment model. The dimensions identified are typical of what is discussed in organization development

literature. Kofman and Senge (1993) discuss elements of organizational culture required in organizations. They specifically noted the dimensions of love, wonder, humility and compassion. It would be interesting to operationalize how these dimensions manifest themselves in organizations and regress them on empowerment. Natural supports, inclusive environments, self efficacy for teamwork and readiness for change are all "soft" human skills that feel consistent with the dimensions Kofman and Senge identified. Understanding the link between these soft skills and organizational effectiveness would offer invaluable insights into how organizations work.

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APPENDIX A

Part I

Please answer your level of agreement with each of these statements by circling 1 if you strongly disagree with this statement, to 5 if you strongly agree with this statement. There are no right or wrong answers.

		Dimension	Strongly Disagree		Neutral		Strongly Agree
1.	I can work very effectively in a group setting.	Teamwork	1	2	3	4	5
2.	I can contribute valuable insight to a team project.	Teamwork	1	2	3	4	5
3.	I can easily facilitate communication between people.	Teamwork	1	2	3	4	5
4.	I am not effective at delegating responsibility for tasks.	Teamwork	1	2	3	4	5
5.	I can effectively coordinate tasks and activities of a group.	Teamwork	1	2	3	4	5
6.	I am able to resolve conflicts between individuals effectively.	Teamwork	1	2	3	4	5
7.	I do not feel I can take on a leadership role in a group and be effective.	Teamwork	1	2	3	4	5
8.	Integrating information and suggestions from individuals into a plan is something I am not very good at.	Teamwork	1	2	3	4	5
9.	If someone who is not included in the mainstream tries to get information or makes a request, others stall or avoid helping them in subtle ways.	Inclusion	1	2	3	4	5
10.	It seems that the real reason people are denied promotions or raises is that they are not seen as fitting in.	Inclusion	1	2	3	4	5
11.	I have to prove myself more and work a lot harder to get into that next position because of my gender or ethnic background.	Inclusion	1	2	3	4	5
12.	It's hard to get ahead here unless you are part of the old boys network.	Inclusion	1	2	3	4	5
13.	The work I do is very important to me.	Empowerment	1	2	3	4	5
14.	My job activities are personally meaningful to me.	Empowerment	1	2	3	4	5
15.	The work I do is meaningful to me.	Empowerment	1	2	3	4	5
16.	I am confident about my ability to do my job.	Empowerment	1	2	3	4	5
17.	I am self assured about my capabilities to perform my work activities.	Empowerment	1	2	3	4	5
18.	I have mastered the skills necessary for my job.	Empowerment	1	2	3	4	5
19.	I have significant autonomy in determining how I do my job.	Empowerment	1	2	3	4	5
20.	I can decide on how to go about doing my work.	Empowerment	1	2	3	4	5

21. I have considerable opportunity for independence and freedom in how I do my job	Empowerment	1	2	3	4	5
22. My impact on what happens in my department is large.	Empowerment	1	2	3	4	5
23. I have a great deal of control over what happens in my department.	Empowerment	1	2	3	4	5
24. I have significant influence over what happens in my department.	Empowerment	1	2	3	4	5

Part II

This instrument measures the dimension of change.

Assume that your department has proposed a change to increase effectiveness and productivity. Your time and energy will be necessary to make the change happen. Please describe how you are likely to feel about the change by answering from 1 (very unlikely) to 5 (very likely). There are no right or wrong answers.

	Very Unlikely				Very Likely
1. I am willing to work harder because the success of the change is	1	2	3	4	5
2. Solving organizational problems with this change is	1	2	3	4	5
3. My willingness to be part of this change is	1	2	3	4	5
4. Creating new ideas is	1	2	3	4	5
5. My ability to find ways to make this change fail is	1	2	3	4	5
6. Doing things in new and creative ways is	1	2	3	4	5
7. Changing the way I work because of the change is	1	2	3	4	5
8. The chances of me taking the blame if this change fails is	1	2	3	4	5
9. My willingness to be a part of this change program is	1	2	3	4	5
10. Learning new things from this change is	1	2	3	4	5
11. The chance that people will believe "Don't fix it if it ain't broke" is	1	2	3	4	5
12. My support for change is	1	2	3	4	5
13. My sense that we should figure out ways we can improve what we're doing now instead of changing is	1	2	3	4	5
14. Selling ideas about change to others is	1	2	3	4	5

Natural Supports Questionnaire:
Please categorize the individual that you have just randomly selected into one of the following three categories:

Item #1 Physical Integration - The employee works, takes breaks, and eats meals in the same place as their co-workers.

- ☐ works in the same areas at the same time as co-workers a portion of the day and takes breaks and eats meals in the same area as co-workers.
- ☐ does not work in the same area as co-workers but takes breaks and eats meals in the same are as co-workers.
- ☐ does not work, take breaks, or eat meals in the same areas or at the same time as co-workers.

Item #2 Social Integration While completing his/her work, the employee has an appropriate number of opportunities to interact with co-workers without negative effects on job performance

- ☐ There are an appropriate number of opportunities for employee to interact with coworkers without a negative effect on job performance
- ☐ There are few opportunities for the employee to interact with coworkers without a negative effect on job performance
- ☐ There are no opportunities for the employee to interact with coworkers without a negative effect on job performance

Item #3 Associating (frequency) Coworker socially interacts with the employee at the work place.

- ☐ Coworker socially interacts with the employee at the work place on a regular basis, typically on a daily basis.
- ☐ Coworker socially interacts with the employee at the work place on an irregular basis, usually only a few times a week
- ☐ Coworker socially interacts with the employee at the work place once or twice a month. Interactions are not intentional.

Item #4. Associating (nature) Coworker socially interacts with the employee in a manner considered appropriate with the context of the workplace.

- ☐ The majority of coworker's social interactions by intention with the employee are considered appropriate within the context of the workplace.
- ☐ The majority of coworker's social interactions by intention with the emplyee are not considered appropriate within the context of the workplace.
- ☐ There are no social interactions or social interactions by intention considered appropriate within the context of the workplace between the employee and coworkers.

Item #5 Befriending Coworker befriends the employee by intentionally interacting socially with the target employee outside of the workplace.

- ☐ Coworker and employee report intentionally interacting socially outside of the workplace within the last two weeks.
- ☐ Coworker and employee report intentionally interacting socially outside of the workplace at least once in the last month
- ☐ Coworker and employee report not interacting socially outside of the workplace.

Item #6 Evaluating - Coworker, when assigned the supervisory responsibility of evaluating the target employee, appraises the employee's performance according to an operationalized standard and provides direct, appropriate (written/verbal) feedback to the target employee on a scheduled or informal basis.

- ☐ Coworker, when acting as a supervisor, appraises the employee's performance according to an operationalized standard and provides direct, appropriate (written/verbal) feedback to the target employee on a scheduled or informal basis
- ☐ Coworker, when acting as a supervisor, evaluates the employee's performance inconsistently (with or without an operationalized standard, with or without providing direct, appropriate (written/verbal) feedback to the target employee) and only provides feedback if performance is perceived to be substandard.
- ☐ Coworker, when acting as a supervisor, does not evaluate and is unaware of the employee's performance.

Item #7 Information Giving - Coworker acts as a source of information by spontaneously volunteering instruction/feedback (regarding vocational skills, social skills, etc.) and in answering the employee's questions.

- ☐ Coworker spontaneously volunteers instruction/feedback and answers questions for the employee
- ☐ Coworker provides information for the employee only when directly asked a question.
- ☐ Coworker discourages employee information seeking behavior by not providing information or answering questions.