OCCUPATIONAL WELL-BEING: THE DEVELOPMENT OF A THEORY AND A MEASURE

by

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B.A., Truman State University, 2000
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AN ABSTRACT OF A DISSERTATION

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Abstract

Research on occupational well-being, commonly conceptualized as job satisfaction or the opposite of burnout, is criticized for its lack of theoretical basis. Danna and Griffin (1999) point out the need to refine this construct as well as develop measures to assess well-being in the workplace. This study proposed a scale of occupational well-being based on the work of Ryff (1989). Ryff's (1989) model of psychological well-being was designed to address similar concerns plaguing research on general well-being. The scales derived from Ryff's (1989) research are theoretically based on a variety of converging theories of optimal well-being that had previously been ignored. Unfortunately, the support for the psychometric properties of the psychological well-being scale is mixed. Researchers have either been able to produce longer, more reliable scales with a poor factor structure or shorter, less reliable scales with strong factorial validity. The results of this study are consistent with general research on well-being. Of the multiple first order models (with six independent factors) produced, the only acceptable fit was from a scale with 4 item sub-scales. Though acceptable by some, the reliability of these subscales was not as strong as it was for longer versions. The fit of the first order model was then compared to that of a second order model (where the 6 dimensions loaded onto occupational well-being). While both models had an acceptable fit to the data, preference was given to the second order model. While they had similar REMSA values, the PGFI was higher for the second order model; researchers have suggested that PGFI be used to help interpret the REMSA value. In addition, the second order model was cross validated, producing results similar to the original findings. This model was then used to assess the relationship between occupational well-being and the context of work; previously, this has been ignored. Partial support was found for a mediated relationship between psychological climate and occupational well-being. Composite psychological climate scores influenced job satisfaction; this in turn, affected occupational well-being. The limitations, contributions, and meaning of the study are then discussed.

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CHAPTER 1 - Introduction

Occupational Health Psychology

While Jonathan Raymond didn't coin the term "occupational health psychology" until 1990 (Raymond, Wood, & Patrick, 1990), Quick (1998) explains researchers have been examining topics related to occupational health for years. As early as the 1800s, Munsterberg (1913) researched the injuries and accidents of motormen. In addition, there has been a rich history of research examining the effect of job satisfaction on work performance (Houser, 1927; Iaffaldano & Muchninsky, 1985). This line of research has generated a vast number of studies and is one of the most widely studied relationships in Industrial/Organizational Psychology.

Unfortunately, as Danna and Griffin (1999) explain, research on occupational health is very "disjointed" and "unfocused," as there is a breadth of included disciplines that relate in some way to workplace well-being and health. Because of the many fields of study that this research draws upon, occupational health psychology addresses health from both physical and mental perspectives. While a variety of approaches address occupational health from many angles, it is important to have principles to join the varying perspectives together.

While early streams of research on topics related to occupational health lack continuity, Adkins (1999) explains that today two themes tie the diverse researchers in occupational health psychology together; research in occupational stress and psychosocial risk management laid the groundwork and identified issues for exploration in the field. There has been a deep history of stress management research in organizations; occupational stress is considered a "health hazard and occupational risk factor." This shared history of occupational and psychosocial studies,

along with the focus of examining health and wellness in the context of the workplace, helps tie researchers from different fields together and unify the field of occupational health psychology.

The momentum around occupational health has led to the creation of journals, conferences and organizations where researchers can share ideas. Sauter and Hurrell (1999) point out that the American Psychological Association created a division designed to increase awareness of occupational health psychology. They state that this division applies psychology to "improve the quality of work life" and to help "protect and promote the safety, health and well-being of workers" (p. 120). This division and its mission, along with other groups (such as the Health and Well-being Focus group in the Organizational Behavior Division of the Academy of Management), further unify the field.

While researchers have long been interested in studying occupational health, management has not always been as intrigued by issues related to their employees' health and well-being. This is illustrated by one researcher's experience on a job interview. Wright (in Wright and Cropanzano, 2000) describes an early interview where he was explaining his research interests to a future employer. The employer cut him off and asked him to explain the bottom line associated with research on employee health. The interviewer stated that an applicant would not be offered a job with the company doing this type of research unless there were financial implications. Unfortunately, Wright and Cropanzano (2000) state this feeling is still sometimes expressed by management.

However, social changes caused organizations to shift perspectives and forced them to attend to their employees' health. Wright and Cropanzano (2000) state that the greatest change agent in the way organizations viewed occupational health was the limited availability of work and the vast amount of work for which employees were responsible. Schor (1991) explains

organizations began to lay off a number of employees; meanwhile, employers expected the remaining employees to continue to carry out the same amount of work. This, combined with the limited employment opportunities, led to an increase in workplace health problems. However, because these problems occurred during a time when health care costs were great (Freund & McGuire, 1991), organizations began to notice these issues. Organizations preferred to mitigate the influence of health problems rather than see their influence on financial outcomes.

While these changes made organizations more interested in occupational health, Adkins (1999) explains that current approaches to employee health are often less than ideal. Most current organizational health approaches are designed under a "disease model." This means that health problems are not addressed by organizations until after they have occurred. Kelloway and Day (2005) criticize many current occupational health programs for focusing on treating individuals who are already experiencing health related concerns. While this attention is important, tertiary care is limited in its scope of influence. These two researchers state that "a sole focus on treatment, however, will limit us to continually 'healing the wounded'" (p. 310) Rather than directing our efforts only to individuals who are already victims of health problems, Kelloway and Day (2005) advocate for interventions that focus on preventative care, changing features of the job to prevent health problems from ever occurring. For example, if an organization finds that many of its employees experience high levels of stress along with other stress-related diseases (heart attacks etc.), they should not only provide stress-management treatments, but they should also take a look at potential causes of the stress: job design, organizational culture, working conditions, and leadership. Modifying whatever is causing stress is more effective than constantly treating diseases resulting from stress after the fact. Ruack (1999) notes this approach operates under the "health model."

Halverson and Bliese (1995) state the best occupational health programs are multifaceted and multi-leveled and, in addition, both treat and prevent organizational ills. Sauter, Murphy, & Hurrell (1990) explain that the National Institute for Occupational Safety and Health has established a strategy that is consistent with this advice. Their four-pronged approach operates under a health model and emphasizes the importance of preventing health-related work problems. Their strategy focuses on making organizational changes to prevent problems, providing information and training to employees, improving health services, and more strictly monitoring potential causes and health problems. Organizations should model their programs after this strategy to most effectively prevent organizational health issues.

Occupational health researchers are also criticized for the way that health and well-being are defined. Ryff (1995) points out that an individual is "viewed as mentally sound if he or she does not suffer from anxiety, depression, or other forms of psychological symptomatology" (p. 99). However, Ryff states that this does not get to the "heart of wellness" and we must define well-being as "the presence of the positive" and, by implication not simply in terms of the absence of the negative (p. 99). To truly enhance health and well-being, Seligman and Csikszentmihalyi (2000) state that it is important to "nurture what is best." However, the limited research on well-being and health that is operationalized according to the health model makes it difficult for practitioners to develop theoretically driven programs to promote positive health. Myers and Diener (1995) state psychology publications publish seventeen articles on negative topics (anxiety, stress, depression etc.) for every article on a positive topic (happiness, joy etc.). The current research adds to this limited body of research by examining occupational well-being, which has often been ignored or incorrectly operationalized. This study enhances our understanding of how to promote and improve occupational well-being.

Because of the limited research in this area, there is also a need to develop valid and reliable instruments to evaluate occupational wellness. Keyes and Lopez (2002) point out that it is necessary to create instruments that are both reliable and valid to assess core concepts in occupational health. Adkins (1999) also emphasizes that it is important to be able to "measure, quantify, and describe" occupational well-being. This study addresses these concerns by proposing and validating a new occupational well-being scale to assess well-being in organizations. This instrument will allow researchers and practitioners to evaluate the occupational well-being in organizations.

Finally, occupational health research is criticized for its failure to examine well-being within the context of the organization. Adkins (1999) points out organizations are complex and involve a variety of relationships between different individuals and groups. As a result, organizations take on a variety of characteristics, both psychological and psychosocial, that influence workplace well-being and health problems. For example, work environments are influenced by their cultures and climates which are organizationally specific. As a result, occupational health psychologists cannot just examine the effects of cause and effect or one-on-one relationships. Rather, they must examine these issues within the complicated psychosocial workplace dynamics. This research addresses these concerns by examining occupational well-being while considering the effects of psychological climate.

Overview of Current Occupational Well-Being Research

Many researchers (e.g. Dana and Griffin, 1999) view well-being as a context-free, global construct. However, other researchers emphasize the importance of assessing well-being in specific contexts, most notably at work. This is often because researchers are interested in outcomes that are associated with work; rather than using global constructs to predict these

variables, it makes sense to use variables that are also specific to the construct. Instead of examining the relationship between general well-being and work-related outcomes, researchers should look at how occupational well-being relates to these variables of interest. Van Horn, Taris, Shaufeli, and Schreurs (2004) note operationalizing well-being in a context specific manner is advantageous for organizational researchers. Such a definition results in a better understanding of how occupational well-being is affected by work related characteristics.

Unfortunately, job specific conceptualizations of well-being differ from study to study. As a result, Danna and Griffin (1999) state a number of approaches to measure these constructs have been developed and often vary according to the particular definition used in the study. For the most part, researchers criticize these approaches for their inability to accurately assess workplace well-being. The proposed measure of occupational well-being was designed to address some of the weaknesses of current methods of conceptualization.

Well-Being: The Absence of Negative Experiences

Research on negative work experiences, such as burnout, strain, and stress, has generated a great deal of research. Danna and Griffin (1999) state the bulk of the occupational well-being literature focuses on occupational stress. Ganster and Schaubroeck (1991) conducted a review of the literature related to occupational stress and uncovered 300 articles that had been published in the previous 10 years. As a result, frameworks to organize the research on occupational well-being typically focus on these negative constructs. For example, Smith, Kaminstein, and Makadok's (1995) framework focuses on the relationships between illnesses and occupational hazards, stress and working conditions, and specific illnesses and characteristics of the work environment or person.

The extensive research on stress and other negative work related states makes it very tempting for researchers to argue that the absence of these states indicates that an individual has a positive sense of occupational well-being. Researchers Danna and Griffin (1999) make this very argument. They point out that some factors, like stress, have a negative influence on employee well-being and health. They further, stating that "by direct implication, then the absence of these various states may positively affect health and well-being" (p. 359). In other words, reducing the amount of stress employees experience would positively influence their overall sense of psychological well-being at work.

This argument is reflected in the research on psychological well-being at work. There are a number of studies in the literature that operationalize psychological well-being in this very manner. For example, Fritz and Sonnentag (2006) conducted a study to examine the effects of workload and vacation experiences on individuals' well-being. They measured well-being with the General Health Questionnaire (Goldberg, 1978), which assesses the number of health complaints that an individual has. In addition, the Oldenburg Burnout Inventory (Demerouti et al., 2001) was used to determine if an individual was burnt out. Individuals who did not experience burnout or health complaints were considered to experience well-being. In a similar manner, Tetrick and LaRocco (1987) used measures of anxiety and depression to assess well-being in their study. Well-being was again operationalized as the absence of these states. For their meta-analysis on the antecedents and outcomes of organizational climate, Parker, Baltes, Youngh, Huff, Altmann, Lacost, and Roberts (2003) also defined psychological well-being as the absence of burnout, anxiety, and stress.

While some researchers are content operationalizing psychological well-being as the absence of the negative states, other researchers disagree with this approach. Spreitzer,

Sutcliffe, Dutton, Sonenshein, and Grant (2006) state the absence of negative experiences does not indicate that individuals have a strong sense of well-being. They also point out that we cannot assume that the antecedents of well-being are simply the opposite of stress enablers. Likewise, decreasing stress and burnout will not necessarily result in occupational well-being. Kinicki, McKee, and Wade (1996) have found that work overload, poor working conditions, and job insecurity are primary causes of organizational stress and strain. Spreitzer, Sutcliffe, Dutton, Sonenshein, and Grant (2006) state that improving these conditions is not enough to create an environment that promotes well-being. Rather, other approaches aimed at cultivating well-being should also be taken.

The criticisms of how well-being has been conceptualized are also evident in the larger body of health research. In many cases, individuals are considered healthy if they do not have a disease or health problem at the moment. However, Emmet (1991) states that health is not the absence of illness. To be truly considered healthy, individuals should not only lack diseases, but have optimal physical and mental functioning. Emmet (1991) also notes that while the definition of health is vague, illnesses and diseases are articulated very clearly. This is parallel to research on well-being. Burnout, anxiety, and stress have been carefully defined, while occupational well-being has been overlooked. Danna and Griffin (1999) emphasize the need for researchers to better articulate what exactly is meant by occupational well-being.

Affective Well-Being: Job Satisfaction

However, some researchers have attempted to better define what is meant by well-being. The bulk of this research has operationalized well-being from an affective perspective (Diener, Suh, Lucas, & Smith, 1999). An affective perspective emphasizes a person's feelings and emotional experiences; individuals who experience positive well-being are thought to feel more

positively and have pleasant emotional experiences. Wright and Cropanzano (2000) explain that organizational research typically thinks of affective well-being as synonymous with happiness. They state that there has been a breadth of research examining workplace happiness, which is typically assessed by measures of job satisfaction.

Job satisfaction has been heavily incorporated into models of occupational well-being. In a recent review of the literature related to health and well-being, Danna and Griffin (1999) considered job satisfaction to be one of the central themes of occupational well-being. They state that overall well-being is composed of both occupational and non-work well-being. In this model, occupational well-being is defined as individuals' work or job-related satisfactions. They further define this as how satisfied or dissatisfied an individual is with attributes of their job, such as pay, opportunities of advancement, work tasks, and their team. As a result, some research studies use job satisfaction as a means of assessing affective well-being at work. For example, Van Horn, Taris, Schaufeli, and Scheurs (2004) used job satisfaction as a measure of affective well-being. Clegg and Wall (1981) note that this is common, as most studies examining work-related well-being focus on job satisfaction.

However, other researchers contend that using job satisfaction to assess well-being is problematic for a number of reasons. For example, some view job satisfaction as a very specific construct that does not accurately represent well-being, which is often viewed as a much broader construct. Wright and Cropanzano (2000) explain that job satisfaction is typically a very narrowly defined construct, focusing only on satisfaction with work. However, well-being is thought to be a much broader construct. This means that job satisfaction, typically assessed by feelings about the job, pay, or co-workers, lacks the breadth to accurately measure occupational health.

Other researchers point out using current measures of job satisfaction to assess occupational affective well-being is problematic. Weiss and Cropanzano (1996) state job satisfaction is typically viewed as an attitude toward the job or other specific facets of the job. Wright, Cropanzano, Denney, and Moline (2002) explain that job satisfaction is thought of as how pleasing individuals feel their job is, and can be considered a cognitive evaluation. Wright and Cropanzano (2000) criticize current research on job satisfaction for relying on the Minnesota Satisfaction Questionnaire and the Job Description Index which have relatively few items that have an affective component. However, affective well-being is typically conceptualized as happiness. Wright and Cropanzano (2000) state that happiness is mostly considered an emotional state rather than a cognitive evaluation. As a result, job satisfaction measures do not accurately measure affective well-being because of their emphasis on cognitive evaluations.

A Multi-Dimensional Approach to Well-Being: Warr's Model

In order to address some of these criticisms, Warr (1987, 1994) developed a model of occupational well-being. This model is multidimensional, rather than solely focusing on affective well-being. This provides a broader conceptualization of well-being that is consistent with how researchers typically think of the construct. A multi-dimensional approach enhances our understanding of well-being because it provides information on other aspects of well-being in addition to affect. Van Horn, Taris, Shaufeli, and Schreurs (2004) state that multidimensional models of well-being result in a more precise evaluation of how well-being affects other variables. Warr (1994) states that a better understanding of well-being allows practitioners to develop and implement a range of solutions to improve well-being. Not only can solutions target affective wellness, but they can be designed to improve other dimensions as well. While

affective well-being is important, Warr (1987, 1994) emphasizes that true operationalizations of occupational well-being are broader.

Warr (1987, 1994) incorporates affective well-being in his model of occupational well-being. Daniels (2000) further investigated affective well-being and found that there are many different types of affective experiences: boredom-enthusiasm, depression-pleasure, anger-placidity, and tiredness-vigor. This indicates that the dimension affective well-being is a multi-dimensional construct as well. Daniels (2000) also found the dimension of pleasure-displeasure accounted for the greatest amount of co-variance among the different types of affective well-being; this suggests the reason for the great deal of empirical research that focuses on job satisfaction. Warr (1987) further contends that affective well-being can be organized according to two dimensions: pleasure and arousal.

In addition to affective well-being, Warr's (1987, 1994) model of occupational well-being incorporates three other primary dimensions: aspiration, autonomy, and competence; in addition, the model integrates a secondary dimension termed integrated functioning. The primary dimensions assess individuals' behavior in relation to their external work environment (Danna & Griffin, 1999). Warr (1994) points out job- related aspirations assess how challenging the goals are that an individual sets for themselves. Individuals with high job aspiration routinely set difficult goals that they strive to achieve. In this model, autonomy refers to the degree to which individuals can control their own behavior, rather than following environmental cues and commands. Warr (1987) states individuals can experience both too much and too little autonomy. Competence refers to individuals' ability to complete tasks with at least some success. While these primary dimensions look at behavior in the context of the external work environment, integrated functioning is different. Danna and Griffin (1999) state that this

secondary dimension "refers to the person as a whole, and can be thought of as being the subjective summation of the interrelationships between the other four concepts" (p. 362).

A Multi-Dimensional Approach to Well-Being: Van Horn et al.'s Model

Van Horn, Taris, Shaufeli, Schreurs (2004) draw upon the research by Ryff (1989) and Warr (1987) to create a comprehensive model of well-being specific to work. They feel that Ryff's conceptualization of well-being is more detailed and inclusive than Warr's (1994) because it incorporates a behavioral component in addition to affective and motivational aspects. However, because Warr (1994) creates a specific context for his model of well-being, work, they felt it made important contributions to the literature.

Van Horn, Taris, Shaufeli, Schreurs (2004) point out that while there is this major difference between the approaches, they have a substantial degree of overlap. Because of the overlap associated with the models of Ryff (1989) and Warr (1994), the authors decided to combine the two into a work-specific model of well-being. Three of these dimensions, affective, social, and professional well-being, are based on the existing overlap between the Ryff (1989) and Warr (1994) models. In addition, Van Horn, Taris, Shaufeli, Schreurs (2004) added two additional dimensions to their model. Research (e.g. Taris, Schreurs, & Van Iersel-Silfhout, 2001) has indicated that cognitive and psychosomatic well-being are related to the other three dimensions of well-being, suggesting that they should be included in models relating to occupational well-being.

In this model, the affective component is defined much more broadly than in other models. It assesses affect by integrating emotional exhaustion, job satisfaction, and organizational commitment. These constructs relate to those proposed by Warr (1987). For example, emotional exhaustion represents the enthusiasm-depression axis. Maslach (1993)

explains that this occurs when an individual feels overextended and has no more emotional resources to draw from. Job satisfaction, while some have found to have cognitive and behavioral aspects associated with it (Brief & Weiss, 2002), is one of the most widely utilized measures of affective well-being. Job satisfaction relates to Warr's (1987) pleasure-displeasure axis. Organizational commitment is often thought of as the degree to which an individual identifies and is involved with the company for which they work, and relates to Warr's (1994) pleasure-displeasure axis as well.

The dimension of professional well-being relates to Warr's (1994) autonomy and aspiration. In addition to assessing job-related motivation, it also assesses ambition, self-efficacy, and achievement. Professional well-being also resembles Ryff's (1989) dimensions of Autonomy and Purpose in Life. Finally, Social well-being in this model assesses two different concepts. First, it assesses the degree to which an individual is depersonalized; Maslach (1993) points out that this reflects the negative attitude and indifference that an individual has toward the people they work with. Ryff's (1989) dimension of Positive Relationships with Others also relates to this construct of social well-being, as it assesses the types of relationships individuals develop. Second, social well-being is conceptualized as how well individuals function in their social relationships at work. While Ryff's (1989) model is not job-specific, this component of Van Horn, Taris, Shaufeli, Schreurs' (2004) social well-being construct again relates to Ryff's (1989) Positive Relationships with Others.

While Maslach's (1993) emotional exhaustion assesses work-related fatigue, it fails to measure how individuals are functioning cognitively. Van Horn, Taris, Shaufeli, Schreurs (2004) suggest that well-being should assess cognitive functioning, especially in an occupational specific model of well-being, because employees should be able to concentrate and focus on

their work at hand. In addition, they should be able to learn new information and apply it; these tasks can be difficult to do with poor cognitive functioning. Because affective well-being and outcomes associated with cognitive functioning, like errors, are related (Broadbent, 1982), Van Horn, Taris, Shaufeli, Schreurs (2004) felt that this aspect of well-being was a very important component of occupational well-being.

Because well-being is also comprised of indicators of an individual's physical health, Van Horn, Taris, Shaufeli, Schreurs (2004) felt that it was important to include a construct relating to psychosomatic well-being in their model of occupational well-being. Previous research (e.g. Kinunnen, Parkatti, & Rasku, 1984) found that affective well-being was strongly correlated with somatic complaints, suggesting the importance of the construct. Van der Hulst (2003) found that many somatic complaints were related to poor working conditions like very long working hours. In addition, de Lange, Taris, Kompier, Hourtman, and Bongers (2003) found that low job control and high job demands were also related to number of somatic complaints. As a result, Van Horn, Taris, Shaufeli, Schreurs (2004) state this information provides evidence that a comprehensive model of occupational health would include psychosomatic complaints.

Van Horn, Taris, Shaufeli, Schreurs (2004) found that the five proposed dimensions of well-being were distinct and separate; they also found that while all five constructs loaded onto a second order factor of occupational well-being, professional, social, and affective well-being had the highest factor loadings. The authors suggest that these three components are the central aspects of occupational well-being while cognitive and psychosomatic well-being play a lesser role. They state that work related well-being can be thought of as one construct composed of other factors where some are more integral than others.

However, this research is not free of limitations and confounds. One of the main problems the researchers point out is that many of the measures used (for example, job satisfaction) were specific to the sample of teachers. Because the measures were directed at the sample of educators, the Van Horn, Taris, Shaufeli, Schreurs (2004) point out that there are problems generalizing the research to other samples. For example, in other samples the core dimensions of occupational health might differ from the ones found for this sample.

In addition, Van Horn, Taris, Shaufeli, Schreurs (2004) point out that the study was designed to assess a five- factor model of well-being; as a result, it is possible that there are other central aspects of occupational well-being that were not studied in this research. The only conclusion that can be made is that a five-factor model of occupational well-being is suggested based on the sample and measures utilized. While the researchers tried to prevent this problem by integrating Warr's (1994) and Ryff's (1989) models into a more comprehensive model, they note that including different measures might have established a different model of occupational well-being.

Summary

Clearly, the summary of current approaches to occupational well-being indicates that there are a variety of different conceptualizations of well-being. Danna and Griffin (1999) point out the need to develop measures to assess well-being in the workplace to provide researchers with a common taxonomy to base their research upon and use in well-being discussions. Danna and Griffin (1999) also emphasize that there is a need to "further develop, refine, and define the core constructs of health and well-being in the workplace" (p. 380). Doing so will provide researchers well-articulated constructs to research, rather than the current vaguely defined

construct well-being. This research attempts to draw upon the existing literature to clearly define occupational well-being and integrate it into a testable model.

General Psychological Well-Being

Criticism of Approaches to General Well-being

The criticisms of general well-being parallel those of occupational well-being. Researchers have articulated well-being in a number of different ways. As a result, researchers debate the strengths and weaknesses of these different ways of specifying well-being. Like occupational well-being, general well-being researchers center their debates around a few different approaches to operationalizing well-being: subjective well-being, life satisfaction, and psychological well-being.

Nearly all discussions of general well-being vigorously debate the distinction between positive and negative affect and life satisfaction. Bradburn's (1969) work is a classic in the well-being literature. This research distinguished between positive and negative affect for the first time. It focused on understanding how macro-level social changes, like changes in political tensions or education levels, affected the lives of individuals; and, as a result, influenced their personal perceptions of well-being. Their research revealed that an individual's answers to questions regarding positive functioning didn't predict their answers to questions about negative functioning. Research indicates that positive and negative functioning relate to different variables. As a result, it is argued that positive and negative functioning are two distinctly different constructs; happiness is operationalized as the balance between the two dimensions. Keyes, Shmotkin, and Ryff (2002) point out that because it is our subjective interpretation of the world that we respond to, rather than our actual environments, assessing subjective well-being is an important way to conceptualize life quality.

While this study was interesting and seemingly contrary to previous thought, it is important to note two criticisms of the research. Ryff (1989a) points out that the research did not focus on finding the structure of psychological well-being; it was instead focused on social changes. The affect findings were not related to the purpose of the study and instead were an unrelated finding. Other theorists caution researchers from utilizing happiness as the only means of assessing quality of life. Becker (1992) points out that many individuals live pointless or unfulfilling lives but are still happy. Mill (1889) argues that happiness is not the end goal, but is a side effect of other goals. As a result, these points, combined with the fact that most individuals view themselves as happy (Diener, 1993), raise concerns about focusing only on the construct of happiness. Ryff and Keyes (1995) point out that this is particularly problematic when other aspects of positive functioning are ignored as a result of the focus on happiness.

The balance of positive and negative affect has not been the only operationalization of psychological well-being. One school of research defines well-being as life satisfaction; a great deal of research has been conducted using this operationalization of psychological well-being. Campbell et al. (1976) explain that life satisfaction is how far an individual perceives themselves to be from their aspirations. The majority of research using this definition utilizes the Life Satisfaction Index (Neugarten, Havington, &Tobin, 1961). However, this index was also not developed for the purpose of studying psychological well-being. It was instead created to distinguish between individuals who were aging successfully from those who were not. Sauer and Warland (1982) criticize the research on life satisfaction as non-theoretically based. Clarke, Marshall, Ryff, and Wheaton (2001) criticize this operationalization for reasons that parallel those criticizing the use of job satisfaction to define occupational well-being. They caution that "reducing the measurement of psychological well-being to a single dimension of morale or life

satisfaction constrains the understanding of well-being" (p. 80). Rather, to fully understand well-being it is important to take a more comprehensive look at this complex construct. Again, critics of life satisfaction cite problems similar to those related to using job satisfaction to operationalize well-being.

Researchers state that well-being measures in general are not theory centered, and this problem presents a barrier to conducting accurate research. Headey, Kelley, and Wearing (1993) criticize well-being measures as "data driven" and not based upon theory. Despite the lack of theoretical basis for defining well-being in these ways, a great deal of research continues to utilize these instruments and concepts in order to operationalize well-being. As a result, Ryff (1989a) criticizes these approaches for ignoring core aspects critical to positive psychological functioning. Other researchers have asserted that the body of well-being research focuses too much on aspects of well-being rather than fully investigating the construct. Ryff further asserts that we must examine other theories central to positive functioning which have been historically ignored.

Ryff (1989a) reviews theories related to well-being that have largely been disregarded. She proposes a theory based on these ideas to counter some of the existing criticisms of general well-being. This theory has been acknowledged by some as a more comprehensive and theory-centered approach to well-being; some feel that it addresses the previous problems in specifying the construct well-being. As a result, a similar theory-based approach to occupational well-being might help to resolve some of the debates and conflicts related to this research.

Development of PWB Theory: Integrating Existing Theories

Ryff (1995) points out that there has been a long history of theory on the makeup of positive psychological functioning. This includes work by Maslow (1968), Rogers (1961), Jung

(1933) and Allport (1965). Other theorists have defined psychological well-being using developmental approaches. These approaches emphasize the different challenges that individuals experience during different phases of life (Erikson,1959; Buhler, 1935; Neugarten, 1968). Jahoda (1958) developed criteria to assess positive mental health, different from conceptualizing health as the absence of illness, which provide a solid foundation for research on positive psychological well-being.

Ryff (1989a) states these theories have failed to make a substantial impact empirically, as very few of them have been substantiated by credible assessments. Researchers have been held back by the lack of credible and valid measures. In addition, these approaches have generated very diverse definitions of well-being. It is hard to determine which of these approaches, or which aspects of each approach, is best suited as a component of psychological functioning. Others point out that this research is highly "value laden" in its conceptualizations of how people should function.

Ryff (1989b) points out that despite these differing perspectives, they can easily be integrated into a simple and coherent operationalization of well-being. After reflection on these approaches, there are a number of apparent similar features of positive psychological functioning. She feels these "points of convergence in the prior theories constitute the core dimensions of an alternative theory of psychological well-being" (p. 1071).

Maslow

Abraham Maslow (1954) developed one of the earliest frameworks for thinking about psychological well-being. Maslow's hierarchy defines human needs in order of priority: physical, safety, social belonging and love, esteem, and self actualization. Physical needs are the most basic bodily needs such as breathing and sleeping. Safety needs are those that make us feel

physically, financially, and otherwise secure such as employment security, health, and freedom from violence. Social belonging and love describes the need to feel loved, accepted, and needed by friends and other social groups. Esteem needs are described as the need to be recognized and respected by others. Self-actualization is very broadly defined, but deals with the need for personal growth and realizing full potential. The lower, physiological needs must be fulfilled to the individual's satisfaction before any resources can be devoted to the higher, psychological needs. Thus, a human being is motivated to act first by basic physiological needs and is subsequently motivated to act by the psychological/higher levels of needs.

While Maslow's hierarchy presents a reasonable framework for thinking about motivation and psychological well-being, there is little empirical evidence supporting it. This is not surprising since Maslow defines the highest level on the hierarchy, self actualization, as "the intrinsic growth of what is already inside the organism, or more accurately, what the organism is." While this is a framework for thinking about how one would become motivated, it does not readily lend itself to empirical testing. More definition and indicative qualities are needed to further assess whether a person has achieved self-actualization.

Carol Ryff (1989b) used Maslow's framework in developing the "Scales of Psychological Well-being," which describes dimensions of a self-actualized individual and how to test for them. While Maslow hypothesizes a hierarchy structure, Ryff's (1989) dimensions are not assumed to have a dependent structure where one need must be met before resources are consumed in pursuit of a higher need. For example, while Maslow (1954) includes "self actualization" as a motivating need, three dimensions from Ryff's Scales of Psychological Well-being (1989), self-acceptance, positive relations with others, and autonomy, are deemed to be present in self-actualized individuals. In Maslow's hierarchy the need for belonging and love is

third, indicating that a self-actualized person would have already satisfied this need and it would no longer be a motivating need. While Ryff (1989) suggests that self-actualized individuals are generally described as having positive relationships, she does not make the assertion that a person must form positive relationships before self-actualization. Rather, she asserts that it is a quality or a dimension that a self-actualized person would exhibit. She also gives no indication that once the need is fulfilled, it would no longer provide motivation for an individual.

Erickson

Erikson (1950) suggested a developmental model for identity development; this proposes that individuals have different goals that change based on their stage in life and that the ultimate goal is stable personal identity. He separates life into eight stages, from infancy when the newborn struggles with whether to trust his/her environment to older adulthood, when people struggle to accept their lives and the relationships they have built. A person will work to resolve the developmental challenge presented during each stage and during that stage, success in that goal provides motivation to act. A person doesn't necessarily successfully resolve a particular developmental challenge before another is presented, but the level of resolution will shape responses to future developmental challenges. However, a person who successfully resolves challenges presented at each stage in development will gain stable personal identity and therefore will experience positive psychological functioning and increased well-being. Critics contend that while Erikson's (1950) model is useful, it does not address gender differences or place enough emphasis on later stages of life.

Erikson's (1950) framework is also evident in Ryff's (1989b) Scales of Psychological Well-being. Relationships with others, widely cited in many frameworks for psychological well-being as well as Ryff's (1989b), are also a key element in Erikson's developmental model. At

each stage, there are "Significant Relations" that are instrumental in successful resolution of the challenge faced. For example, in infancy a child is challenged to learn trust, which will clearly be influenced by the relationship he/she builds with the maternal parent. If the child learns to trust the maternal parent, he/she has learned to trust the environment. When a person is in the "Middle Adulthood" phase, a healthy relationship with community and family will help successfully resolve the current goal of generativity. By creating positive relationships with their children, there is a sense of producing value and therefore resolution to the goal of generativity. So, while relations with others are an important dimension of the Scales of Psychological Well-being, here we can see that they are something that are developed over time and important as a basis for resolution to challenges, not a goal in and of themselves. In contrast, Ryff (1989b) merely notes that positive relationships with others are generally observed in people that exhibit psychological well-being.

Allport

Allport (1937) believed that the functioning most relevant to human behavior is the means by which we express ourselves, or propriate functioning. The term "propriate functioning" comes from proprium, Allport's definition of self that is made up of different traits, or as he later defined them, of different dispositions. These dispositions are grouped into common traits, cardinal traits, central traits, and secondary traits. Common traits are traits that we share with many others and might be part of society. Cardinal traits are traits or dispositions that are so strong that most of a person's activities are centered on them. Cardinal traits are rare; it is likely that a person who has one is famous so that they become synonymous with the trait. For example, Mother Theresa brings caring and self-sacrifice to mind. Central traits are traits or dispositions that Allport describes as "building blocks of personality" and a person typically has

five to ten central traits. These are the traits that most people would use to describe you. Secondary traits are those that are not quite as indicative of true self, but may be situational or attitudinal.

These traits form our personalities and in turn shape our motivations. Allport (1937) makes clear that there are infinite possibilities and therefore any analysis needs to be individually based. Because you see a trait exhibited in a person does not mean that you can know the motivation for it. In fact, people do many things that once had a clear motivation that might have been physical, economic, or erotic but have become self-sustaining. Allport (1937) gives the example of a seasoned carpenter who perhaps once was praised for his precise work and also rewarded for it, but now produces high-quality work because "what once was an instrumental technique becomes a master-motive." Propriate functional autonomy is Allport's (1937) term for these behaviors that are not merely habit, but a function of personality. Behaviors that have merely become habits Allport (1937) refers to as preservative functional autonomy.

It is when these personality traits or dispositions are fully developed that a person is psychologically healthy. Allport's (1965) analysis results in behaviors similar to what other theorists describe as being exhibited by healthy individuals: extension of self, warm relations with others, realistic perception, self-objectification, problem- centeredness, self-acceptance and emotional security. Self-acceptance and positive relations are also central to the theory proposed by Ryff (1989a).

Ryff (1989a) states that these different theories and approaches to positive psychological functioning have a number of common themes. These approaches also seem to suggest a new direction for research on happiness and well-being, contrary to previous approaches emphasizing life satisfaction and affect. Very few empirical approaches to well-being have emerged from

these approaches, despite these prevalent common themes in existing theory. Integrating these commonalities into one theoretical approach to well-being is an important step in the psychological well-being research. Doing so not only expands on the well-being research, but also broadens it and stretches it into new directions.

Development of PWB Theory: Research Approach

In addition to surveying the extant literature on approaches to well-being, Ryff (1989a) conducted a research study which asked individuals to define what well-being means. This approach generated a number of similar themes that were consistent with those uncovered by the literature review. Ryff (1989a) found that all individuals (men, women, old, and middle aged) felt it was important to have an 'others orientation' for positive functioning. They suggested that individuals must be compassionate, have positive relationships with others, be caring etc. Ryff (1989a) emphasizes that this is in contrast to many other research findings on indicators of positive psychological functioning. None of the commonly used measures of well-being (life satisfaction, subjective well-being, etc) have a central emphasis on our relationships with others. While they might be a component of some, never have relationships with others been proposed as a key dimension of well-being by any researcher. These findings do align with other open ended qualitative approaches: Flanagan (1978) found that having strong relationships with others was important to an individual's life quality experience. Ryff's (1989a) study also indicated that self-focus is an integral component of well-being; respondents stated that self-acceptance and self-knowledge were important for positive functioning. Conversely, being self-critical and self-centered was considered reflective of negative well-being. Ryff's (1989a) research also indicated that participants felt that the ability to accept change was important, and identified a new potential dimension of well-being. Participants felt that to have positive well-being, people

must be able to accept that they can't control where life leads them. In addition, individuals have to be able to not only adapt to changes, but initiate them when they are necessary.

Ryff's Theory of Psychological Well-being

After examining the literature related to positive functioning, noting the many intersecting ideas and conducting research that asked individuals to define positive functioning, Ryff (1989b) created a multidimensional theory of well-being incorporating these ideas. Keyes, Schmotkin, and Ryff (2002) state that each of the dimensions of well-being "articulates different challenges individuals encounter as they strive to function positively" (p. 1008). This means that individuals try to feel positive about themselves despite challenges on these dimensions. For example, Keyes, Schmotkin, and Ryff (2002) state that even when people acknowledge their own limitations (self-acceptance), they still try to feel good about themselves. We struggle to create environments that will allow us to meet our needs (environmental mastery) and form strong relationships with others (positive relationships with others). In order to shape our individuality in this world, individuals strive to develop a sense of personal authority and self-determination (autonomy). Individuals also desire to continually improve and develop (personal growth). Finally, it is important for us to create a sense of meaning for our struggles, challenges, and efforts (purpose in life). This allows us to create meaning in our lives. King and Napa (1998) state that meaning is what makes a life desirable; PWB theory is interested in understanding how individuals create meaning in their lives.

Ryff and Keyes (1995) define self-acceptance as the degree to which people acknowledge and accept all aspects of themselves, both good and bad. People who do not accept themselves unconditionally will struggle with their bad qualities or might wish to be someone else. People who think negatively like this might simply wish to be another person rather than set behavior

goals for themselves and act in a way that is consistent with their personal beliefs. It indicates a sense of dissatisfaction and hopelessness. If a person generally accepts themself but recognizes opportunity for improvement, they have confidence in themself and their ability to make positive changes. A person who agrees strongly with a statement such as "I like most aspects of my personality" will probably have high self-acceptance. A person who disagrees with this statement might be generally disappointed with their past life and wish they had done things differently or wish they possess different qualities.

Ryff and Keyes (1995) state that individuals with positive relations with others are able to form warm and satisfying relations with others, show concern for their welfare, and possess feelings of strong empathy, affection, and intimacy with them. A person who creates positive relationships with others will have a sense of support and belonging that are important in creating feelings of confidence and recognition. Without positive relationships, a person might feel discouragement and lack of belonging that are not conducive to positive functioning. A person who strongly agrees with a statement such as "People would describe me as a giving person, willing to share my time with others" will probably have strong positive relations with others. A person who disagrees with this statement might exhibit an inability to make compromises or express caring feelings necessary in developing warm and trusting relationships.

Ryff and Keyes (1995) define autonomy as self-determining and independent, and able to resist social pressures to think and act in certain ways, regulate behavior from within, and evaluate themselves by personal standards. A person who subjects themself to external standards and social pressure may act in ways that are counter to their own beliefs. However, a person who creates internal expectations for themself will be able to act in a way that supports their own beliefs and purpose, thus creating a positive outlook based on their own criteria. A person who

agrees strongly with a sentence such as “I have confidence in my own opinions, even if they are different from the way most other people think” will probably exhibit autonomy. A person who disagrees with this statement is concerned with external expectations and evaluations and acts according to these guidelines rather that internally developed ones.

Ryff and Keyes (1995) define environmental mastery as the degree to which a person feels competence in managing their immediate and distal environment. If a person feels that they lack control over their environment, they might not take steps to accomplish their goals as they feel that this is hopeless due to external roadblocks. A person who does feel that they can use their environment in a positive way will be able to set goals for themself and use their time and resources to achieve these goals that are personally meaningful. A person with mastery over their environment will strongly agree with a sentence such as “I am good at managing the responsibilities of my daily life.” This would indicate that the person is confident in their ability to manage external activities, able to make effective use of opportunities, and can create an environment that is conducive to meeting their personal needs and values. A person who disagrees with this statement will feel unable to create or change their environment or take advantage of opportunities in order to meet personal needs or support their values.

Ryff and Keyes (1995) define purpose in life as having goals and a sense of directedness. A person with a sense of purpose in life will use their beliefs of what is important in allocating their time to activities they feel will help them achieve their objectives. Expressing beliefs by working toward and achieving ones goals will create a sense of accomplishment and a worthwhile use of time. Conversely, a person without this direction in their life might participate in activities that create despair, as they are not working toward a goal that is meaningful to them and therefore their activities are meaningless. A person with a sense of life purpose might agree

strongly with a statement such as “Some people wander aimlessly through life: I am not one of them.” This person will have personal beliefs and goals that give life purpose and will feel that there is meaning to past and present life. A person who disagrees with this statement will generally not have a feeling of purpose in life and will lack goals, beliefs, and the sense of direction that would create the sense of purpose.

Ryff and Keyes (1995) define personal growth as having a feeling of continued development. A person who experiences continued growth and development throughout life has experienced success in meeting personal goals and therefore has a sense of control and confidence. A person who does not have this experience of successful growth will not have a sense of accomplishment or control and might act negatively as they may not have set goals for themselves or understand how their actions facilitate personal growth. A person with high personal growth might agree strongly with a statement such as “For me, life has been a continuous process of learning, changing, and growth.” This person will feel that they have grown over time and have improved their thoughts and behaviors accordingly. A person who disagrees with this statement might not feel an ability to reach their full potential and will not develop new attitudes and behaviors. This person will have a sense of personal stagnation.

Proposed Theory of Occupational Well-being

Ryff’s extensive work to develop a theory based conceptualization of well-being is much more expansive than efforts by occupational well-being researchers. Research on general well-being and occupational well-being share many of the same criticisms. Ryff’s (1989a) work has addressed many of the problems outlined by research on general well-being; because occupational well-being is a context specific way of examining well-being, it is plausible that the existing theories related to positive functioning and work by Ryff might be applicable to a well-

being theory specific to the work context. As a result, this study proposes a theory of occupational well-being based on the work by Ryff and colleagues.

Proposed Occupational Well-being Dimensions

Assessing occupational well-being requires that the construct is correctly specified and has a valid and reliable instrument. In many instances, occupational well-being has been incorrectly defined resulting in muddy research. Most past research has defined the construct as either the absence of stress and strain or job satisfaction. Other researchers have attempted to address this problem (e.g. Warr, 1987; van Horn et al., 2004), but have not completely articulated the construct. Petterson and Arnetz (1997) state there is a great need for tools to accurately measure occupational well-being and other work quality issues. They point out that few instruments have been used repeatedly throughout the literature, resulting in a need for instruments that are used repeatedly in different samples.

The current study draws upon research by Ryff (1989b) in order to address the construct specification problems in the literature and provide researchers with a well-articulated theory of occupational well-being as well as an instrument to assess this construct. As suggested by Ryff (1989) this study hypothesizes that occupational well-being is a multidimensional construct, composed of six dimensions: Positive Organizational Relationships, Professional Self-Acceptance, Job Autonomy, Job Purpose, Environmental Mastery, and Job Growth. It is hypothesized that these dimensions load onto one higher order factor, overall Occupational Well-being.

Positive Organizational Relationships

Research on general well-being suggests that relationships are important for overall well-being. A great deal of research has focused on the social support an individual receives, which

Quick, Quick, Nelson, and Hurrell (2003) state is assistance from their relationships. Cobb (1976) explains that individuals also feel like they are supported socially when they feel valued and cared for and as if they belong. Researchers believe that social support plays a large role in the well-being of individuals. Ganster, Fusilier, and Mayes (1986) state it has a direct effect on well-being. Other researchers (e.g. Seers, McGee, Serey, & Graen, 1983) suggest that social support can serve as a buffer to protect against stressors thus improving well-being. House et al. (1988) conducted a review of the literature on social support and found that individuals that lacked social support were not as healthy, either physically or psychologically, as individuals with greater support networks.

While the dimension is suggested by Ryff (1989b) to be important for general well-being and research confirms this, it is likely that the relationships that an individual has formed at work enhance their occupational well-being. Research suggests that these work relationships can have a positive effect on an individual's occupational well-being. For example, Loscocco and Spitze (1990) found that when individuals had satisfying relationships with others at work, they experienced less work distress. Quick, Quick, Nelson, and Hurrell (2003) point out social support helps an individual cope with the demands of work thereby improving well-being and reducing stress. Viswesvaran, Sanchez, and Fisher (1999) found that social support negatively correlated with occupational strain. Strong relationships and social support from peers and supervisors can have positive effects on occupational well-being. Quick and Quick (1984) note it is important to have supportive relationships with peers and business partners. These relationships can help individuals handle problems with their supervisors. Frone, Yardley, and Markel (1997) found that coworker support negatively correlated to work distress. Cohen and Wills (1985) state that it is especially important for individuals to have strong relationships with

their supervisors; this relationship can provide individuals with greater information, social support, and improved confidence and esteem. Frone et al. (1997) found that individuals with supportive managers experienced less distress at work.

The proposed scale assesses the quality of relationships an individual has formed in their organization. Research on well-being has found that relationships are an important resource for individuals so that they can maintain a positive sense of well-being. While the extant research has typically conceptualized well-being in terms of stress, it does provide an indication that positive relationships can promote well-being. In addition, most of the past research has assessed relationships in general, rather than relationships within the organization (e.g. House et al., 1998; Ganster, Fusilier, & Mayes, 1986); there has been more limited research focused on relationships with co-workers and supervisors. However, because the proposed scale assesses occupational well-being, it is important to address the dimensions, including relationships, in a manner that is specific to work. As a result, the proposed scale assesses the quality of relationships that an individual has developed within their organization.

Professional Self-Acceptance

Research suggests that for individuals to experience positive well-being, they should feel positively about themselves and their past. Research related to self-efficacy and organizational-based self-esteem indicates that similar constructs are important to occupational well-being. Bandura (1997) states self-efficacy is an individual's perception of their own competence. Individuals with high self-efficacy believe that they are competent and have the ability to complete tasks while individuals low in self-efficacy doubt their competence and ability to perform tasks. Research indicates that well-being is influenced by an individual's self-efficacy; some research suggests that employees with high self-efficacy are less bothered and influenced

by stress. Jex, Bliese, Buzzell, and Primeau (2001) found soldiers with higher scores on a self-efficacy measure had more positive reactions to stressors at work than those with lower scores. Schaubroeck, Lam, and Xie (2000) found that employees high in self-efficacy and who believed that they had a great degree of control in their jobs experienced fewer stress symptoms than other comparison groups. Employees who had low self-efficacy scores but felt they had control over their jobs still experienced stress related symptoms. This led the researchers to conclude that perceptions of control couldn't account for these findings and that self-efficacy had a strong influence on individual well-being. Research has also examined the relationship between self-efficacy and job satisfaction, finding that employees with higher self-efficacy also experienced greater job satisfaction. For example, Judge and Bono (2001) found self-efficacy had a significant relationship with job satisfaction. Lu, Siu, and Cooper (2005) found that the self-efficacy of managers was positively related to job satisfaction; in addition, they found that it was negatively related to both physical and psychological strain.

A concept related to self-efficacy is organizational-based self-esteem; Schultz and Schultz (2006) state that this is how valued and worthwhile we feel by our employer. They further explain, stating that people with strong organizational-based self-esteem see themselves as key members of the organization who can effectively perform their jobs. These individuals don't let a mistake shape their perception of their organizational worth. Rather, they see themselves as individuals who make important and meaningful contributions to the organization. Schultz and Schultz (2006) state that research shows that people low in organizational-based self-esteem are more affected by job stress than people with better organizational-based self-esteem. They explain that workers with low organizational-based self-esteem are likely to be more prone to experience role conflict (which is considered a major workplace stressor) and less

managerial support. Schultz and Schultz (2006) also state that employees with low organizational-based self-esteem are less equipped to effectively cope with stress.

Previous research supports the idea that an individual's perceptions and feelings of their worth and competence are important to occupational well-being. This, in light of Ryff's (1989b) extensive research on the importance of personal self-acceptance, suggests that Professional Self-Acceptance is an important construct to measure in order to assess occupational well-being. As a result, the proposed scale includes items related to this dimension.

Autonomy

Clark (2001) suggests that job autonomy, or the ability to dictate how, when, and where tasks will be completed, is an important contributor to well-being. The researcher found that individuals that had control over these aspects of their jobs experienced greater job satisfaction. Parasuraman and Alutto (1984) found that individuals with more job autonomy also experienced less stress. The issue of control and job autonomy has played a central role in two well-being theories. These theories try to explain how job autonomy influences individual well-being.

Warr (1987) has proposed the Vitamin Model, which compares different potential antecedents of stress to either Vitamin C or Vitamin D. Vitamin C has a positive effect on the body as long as a certain threshold has been met; if someone ingests too much Vitamin C, the body is able to excrete it. As a result, additional Vitamin C does not have a positive or negative effect on the body. However, the body requires a certain amount of Vitamin D; too little or too much is detrimental to the body. Warr (1987) likens job autonomy to Vitamin D. Individuals that have little autonomy in their job are likely to experience reduced well-being, while individuals with too much job autonomy are also likely to have a decreased level of well-being. This might be because individuals who lack autonomy have less responsibility or control;

individuals with too much autonomy might feel overwhelmed. In both cases, these feelings impair an individual's sense of well-being. Research suggests support for the curvilinear relationships between job autonomy and well-being. De Jonge and Schaufeli (1998) found a curvilinear relationship between job autonomy and employee well-being. This indicates that too much or too little job autonomy might negatively influence an individual's sense of well-being. In addition, Warr (1990) found a curvilinear relationship between job autonomy and job satisfaction; this suggests that individuals who are the most satisfied with their jobs do not experience too much or too little job autonomy.

In addition, decision-related autonomy has also been studied by researchers and integrated into models of well-being. Tummers, Landeweerd, Janssen, and van Merode (2006) suggest that this influences job autonomy. Karasek (1979) incorporated the idea of autonomy related to decisions into the demand-job control model. This model states that two factors are important for individual health and well-being: job demands and job decision latitude. According to this model, the workload demands that an individual experiences are termed job demands. Meanwhile, an individual's job decision latitude references the amount of authority an individual has to make decisions. This model proposes a matrix that predicts well-being according to the combination of these two factors, resulting in four different types of jobs. Passive jobs occur when there is low job demands and low decision latitude. Low-strain jobs result from low demands and high decision latitude, while high-strain jobs are the culmination of high demands and low decision latitude. Finally, active jobs result when there are both high demands and decision latitude. High strain jobs have the most negative effect on well-being, while active jobs result in very little harm to individual well-being. This is hypothesized to be because the autonomy or decision latitude negates the effects of the high workload.

Research has found support for the positive effects of decision latitude. Schnall et al. (1994) found that high-strain jobs were related to high blood pressure and other cardiovascular problems. While this research focused on physical health, it suggests the possibility that high-strain jobs negatively influence well-being. Other research suggests that there are differences in the psychological well-being of individuals with high-strain and active jobs. Landsbergis (1988) found that individuals in these types of jobs had substantially different levels of well-being. Individuals with active jobs experience better well-being than those employed in high-strain jobs. Research also confirms that individuals with high strain jobs have worse well-being than individuals in the other types of jobs. Van der Doef and Maes (1999) conducted a meta-analysis and found that individuals in high strain jobs experienced the worst well-being. Individuals in passive jobs (those with low decision latitude and low workload demands) and those in active jobs (characterized by high workload and high decision latitude) experienced better well-being than those in high-strain jobs. These comparisons indicate that the autonomy an individual experiences related to making decisions is an important determinant of well-being.

Because extensive research indicates that autonomy is an important indicator of well-being, the proposed model of well-being includes this dimension. Including this dimension is consistent with the scale proposed by Ryff (1989b) and is aligned with past research. Autonomy is an important indicator of well-being, which has been overlooked by past attempts to conceptualize occupational well-being.

Job Purpose

Research suggests that meaningful work has a positive effect on well-being. Kahn (1990) defines psychological meaningfulness as the outcome of work investments, including those that are emotional, physical, and cognitive. This means that the work returns something to the

individuals; it might make them feel good or as if they have learned a new concept. Brown and Leigh (1996) further explain that individuals who perceive their work to be meaningful experience it as stimulating and satisfying. In addition, White (1959) states that when individuals feel that their jobs make significant contributions to the organization's goals or outcomes they are more likely to perceive their jobs as meaningful. Hackman (1977) hypothesizes that the antecedents of work meaningfulness, skill variety, task identity, and task significance, contribute to higher satisfaction with work. Perceiving that the tasks an individual performs are important and are identifiable in the final project helps to make work more meaningful. Job redesign and job enrichment are strategies widely used in efforts to enhance meaningfulness of work. Begat, Ellefsen, and Severinsson (2005) found that the ability to find meaning in ones work influenced the well-being of a sample of nurses.

While little research has been conducted to examine the relationship between job purpose and well-being, studies by Ryff (1989b) suggest that purpose is important to general well-being. In addition, current efforts by organizations to add meaning to jobs, theories, and limited research suggest that this dimension could be an important indicator of occupational well-being. The proposed study assesses items related to individual perceptions of job purpose in order to include the dimension in the proposed scale of occupational well-being.

Environmental Mastery

Quick, Quick, Nelson, and Hurrell (2003) state that employees can control some aspects of the work environment, but have less control over others. Whetton and Cameron (1995) state that planning and time management skills help employees to control aspects of their work environments. These skills can also decrease environmental uncertainty. Bodt (1995) states environmental uncertainty occurs when there is not enough information related to tasks or

activities. Van Merode, Groothuis, and Hasman (2004) have found that environmental uncertainty is influenced by the degree to which an individual has "planning freedom." They further explain that the ability to plan influences whether employees perceive situations to be stressful or challenging. Employees who have a great deal of planning freedom experience lower environmental uncertainty because they perceive greater control over the situation and tasks at hand. Research on environmental uncertainty and planning suggests that these constructs influence individual well-being. Employees can better manage their workload to minimize cycles of doing nothing and task overload (Quick, Quick, Nelson, & Hurrell, 2003). Begat, Ellefsen, Severinsson (2005) found that that fast paced hospital environment and a great deal of uncertainty influenced the degree to which nurses could plan their day. As a result, the inability to plan their workload and day had a detrimental effect on their well-being.

In order to assess occupational well-being, the proposed scale evaluates individuals' perceptions of their control over their work environment. The dimension environmental mastery is included in the proposed scale, consistent with the scale conceptualized by Ryff (1989b).

Job Growth

Research suggests that career development and growth opportunities are important factors related to well-being. Cartwright and Cooper (1993) state that having too few development opportunities can lead to job dissatisfaction and stress. The amount of effort and attitudes an individual has toward their own professional development are also important. Petterson and Arnetz (1997) conducted a study that examined individuals' personal development; they defined this by assessing employees' efforts toward developing their work competencies, ability to learn new work-related skills, and the degree to which their job stimulated additional personal development. Because the construct was defined specifically to

the work context, it is very similar to job development. The researchers found that personal development had correlations with well-being and health measures. It was positively correlated to well-being, suggesting that individuals who took time for personal development had a better sense of well-being. In addition, they found that personal development was negatively correlated with psychological ill health and psychosomatic symptoms. The greater degree of personal development, the fewer negative psychosomatic and psychological ill health symptoms participants experienced. As suggested by this research and the scale Ryff (1989b) created, the dimension job growth is included in the proposed scale in order to better understand occupational well-being.

Summary

The proposed scale addresses the many problems related to conceptualizing existing measures of occupational well-being. In addition, the scale draws upon the extensive research conducted by Ryff (1989b) which has attempted to more accurately and fully assess general psychological well-being. Because previous measures of well-being lack theoretical grounding, this is an important characteristic of the proposed scale. Past theory and research suggests the dimensions of general psychological well-being are equally important in a context specific to work. Research in organizations suggests that the proposed dimensions are relevant to occupational well-being.

In addition, the proposed dimensions have some overlap with the two occupational well-being theories that have been previously proposed. Van Horn et al. (2003) and Warr (1987) proposed theories with some similar dimensions. For example, Warr (1987) hypothesized that aspiration, autonomy, and competence are aspects of occupational well-being; these dimensions relate to job purpose, autonomy, and professional self-acceptance. In addition, Van Horn et al.

(2003) proposed the dimensions of social well-being (related to Positive Organizational Relationships) and professional well-being (related to Job Purpose and Professional Self-Acceptance). However, these researchers did not develop scales to reflect their theories, and instead relied on existing measures which they integrated into their theories. The proposed study integrates these dimensions into a theory of occupational well-being and creates scales to assess this construct.

PWB Scale Development and Psychometric Research

Scale Development: Original PWB Scale

In order to create scales to assess the psychological well-being, Ryff (1989b) follows what Wiggins (1973) outlines as an approach to scale development that is construct-oriented. Wiggins (1973) states that before developing an empirical measure it is important that there is a theory that outlines the construct. Ryff's (1989b) approach is based on the PWB theory, which is an attempt to unify previous theories of well-being. Ryff's (1989b) goal was to develop structured instruments so that individuals could provide self-reports on each PWB dimension.

In order to develop the PWB scale, Ryff (1989a) began by developing definitions of each of the dimensions of well-being. Using these definitions, Ryff (1989b) developed 80 items for each scale; half were for each extreme of the definition. Three item writers created the questions, under the guidance that items would be suitable for both sexes as well as all ages. Ryff also instructed the item writers to write items that were self-descriptive.

These items were then evaluated to determine their soundness. Ryff (1989b) used the following criteria to assess the quality of the questions generated by the item writers: item ambiguity; redundancy; fit with dimension definition; ability to differentiate item from items on other dimensions; breadth of items; ability to produce responses with variance. The evaluation

of items on the basis of these criteria led to the removal of half of the items for each dimension. Thirty-two items remained for each dimension; each sub-scale had 16 positively and negatively worded questions remaining. These questions were then administered to a sample of participants. The participants were instructed to provide a rating for themselves on each question using a 6 point Likert scale; the scale ranged from "strongly agree" to "strongly disagree."

Ryff's (1989b) item-scale correlations were derived for each of the questions. If an item had a higher correlation with another sub-scale than the one it was supposed to represent, it was deleted. Likewise, items were deleted if they had low correlations with the rest of the items in the sub-scale. Twenty items remained for each dimension, comprised roughly of half positively and half negatively worded questions. This approach resulted in the original Scales of Psychological Well-being.

Scale Development: Shortened Version of the PWB Scales

Researchers have developed several different versions of the PWB scale, which differ in terms of their length. There are versions with 3, 6-8, 14, and 20 items per sub-scale. While the original PWB scale had 20 items for each dimension, this is not necessarily practical for collecting data on a number of constructs. To address the need to have more succinct versions of the sub-scales that could be used in addition to a number of other scales, researchers have used different methodologies to develop shortened versions of the scales. Ryff, Lee, Essex, and Schmutte (1994) developed a scale with 14 items per sub-scale. These items were selected for the shortened scale based on their item-total correlations and how well they fit with the theoretical definitions for each sub-scale. Van Dierndonck (2004) also empirically developed new shorter versions of Ryff's sub-scales, but began using the 14 item sub-scales. The 14-item scale was administered to the sample, and the researcher examined the item-total correlations of

each item. Van Dierndonck also examined the factor analysis for items that didn't cross-load; on the basis of these two criteria, Van Dierndonck (2004) derived sub-scales consisting of 6-8 items each. However, other researchers (e.g. Cheng & Chan, 2005) have criticized this approach for producing sub-scales of varying lengths; Ryff's (1989b) original sub-scales were composed of a uniform number of questions.

In the interest of reducing the length of the scales considerably, Ryff and Keyes (1995) created sub-scales comprised of 3 items each, to use in a national study. These items were selected solely on how well they fit with the conceptual definitions of the sub-scales. While the shortened versions of the sub-scales correlated well with the original scales (.70 to .89), they suffered from low internal consistency. Cheng and Chan (2005) attempted to address this problem by creating very short yet psychometrically sound measures of well-being based on Ryff's sub-scales. However, they utilized an empirical approach. They also aimed to create uniform sub-scales; however, Cheng and Chan's (2005) sub-scales were composed of 4 items each. While Cheng and Chan (2005) initially hoped to retain the items from Ryff's 3-item scales, they were not successful in this attempt. They did demonstrate that adding one item did improve the internal consistency, probably because there was an improved sampling of the sub-scale's content.

Psychometric Properties of the PWB Scale

Before using a scale for research or applied purposes, it is essential to have evidence indicating that it is a reliable and valid instrument (Crocker & Algina, 1986). It is even more imperative to examine the psychometric properties of the PWB scale because it serves as the basis for the development of the proposed scale. While some researchers (Ryff, 1989a; Ryff & Keyes, 1995) have found evidence that the instrument demonstrates adequate reliability, factorial

structure, and construct validity, other researchers (Hillson, 1997; Springer & Hauser, 2002) have found conflicting results and question the psychometric properties of the scale. Before making recommendations for the development of a scale to assess occupational well-being, a thorough review of the psychometric properties of the PWB scale was conducted.

Reliability of Scale

Crocker and Algina (1986) point out that measures should be reliable; on reliable instruments, individuals respond consistently throughout the test, on alternative forms of the measure, or when tested again. When researchers assess the consistency of a single instrument over time, a coefficient of stability is computed; a sufficiently high coefficient of stability indicates that when the test is presented to individuals repeatedly over time, their responses are consistent. Ryff (1989b) assessed this for the Psychological Well-Being Scale by re-administering the questions to a portion of her sample 6 weeks later. These reliability estimates were considered adequate, ranging from .81 to .88 for the sub-scales.

In addition, Hunter and Schmidt (1990) emphasize the need for scales to demonstrate adequate internal consistency; they explain that when scales are not internally consistent, they underestimate the actual correlations between the assessed constructs. Researchers have come to mixed conclusions regarding the internal consistency of the scales, depending on the version of the scales used. Using the longest version of the scale, which included 32 items for each sub-scale, Ryff (1989b) found that the internal consistency for each of the sub-scales of the instrument were high. They ranged between .86 (for Autonomy) and .93 (for Positive Relations With Others). Van Dierndonck (2004) derived sub-scales consisting of 6-8 items each. The internal consistency for these versions of the sub-scales was considered adequate with alphas

ranging from .72 (for Personal Growth) to .81 (for Self-Acceptance, Purpose in Life, and Autonomy).

However, research using shortened versions of the scales is plagued with poor internal consistency. Ryff and Keyes (1995) created a very short version of the sub-scales, with just 3 items each, to use in a national study. While the shortened versions of the sub-scales correlated well with the original scales (.70 to .89), they suffered from low internal consistency. The internal consistencies for each shortened sub-scale were between .33 (for Purpose in Life) and .56 (for Positive Relationships With Others). Clarke, Marshall, Ryff, and Wheaton (2001) also found that the three-item sub-scales didn't demonstrate sufficient internal consistency. Cheng and Chan (2005) demonstrated that adding one additional item to the sub-scales did improve their internal consistency; the scales had "relatively more acceptable internal consistency coefficients" (p. 1307). These ranged from .55 for Personal Growth to .70 for Purpose in life. Cheng and Chan (2005) explain that this is probably because the additional item helped to improve the sampling of the sub-scale's content.

While some researchers (e.g. Springer & Hauser, 2002) are concerned about the low coefficients of internal consistency for the shorter versions of the scales, Ryff and Keyes (1995) are less so. The authors cite Bollen (1989) to explain that for "congeneric indicators," using alpha to estimate internal consistency results in a "conservative estimate." They further explain that items for the shortened versions of the scales have been selected for "conceptual breadth…rather than to maximize internal consistency." Because of the broad nature of the sub-scales, they believe that shortened versions should still capture this breadth rather than focusing specifically on internal consistency. Other researchers (Springer & Hauser, 2002; Van

Dierndonck, 2004) believe that shortened versions should still demonstrate adequate psychometric properties.

Structure of Scale

When a scale is hypothesized to measure multiple factors, Crocker and Algina (1986) state that it is important to provide evidence that they actually do. A factor analysis is a useful method to help determine if the correlations between the items and factors support the hypothesis. Because Ryff's (1989b) theory of Psychological Well-being is thought to be composed of 6 factors which relate to a higher order construct (well-being), factorial analyses are necessary to substantiate this hypothesis. However, the structure of the scale is controversial and researchers have found conflicting evidence. For example, Ryff (1989a) and Ryff and Keyes (1995) found evidence supporting Ryff's proposed 6-factor solution. However, Kafka and Kozma's (2002) research contradicts their findings.

Support for PWB Theory

Some research supports Ryff's (1989b) theory of Psychological Well-Being, finding 6 clear factors that all load onto a higher order well-being factor. Ryff and Keyes (1995) found that the best fitting model was composed of 6 distinct factors loading onto a second, higher order factor. This model fit the data substantially better than other models, including a one factor model. This study supports that psychological well being is a multidimensional construct, composed of the six factors suggested by Ryff (1989b). Some researchers interpret Van Dierendonck's (2005) findings as supportive of Ryff's theory. Van Dierendonck (2004) tested the scale's multidimensionality in a group of college students (with a mean age of 22) and a group of community members (whose mean age was 36). They conclude that the 3-item sub-scales demonstrated a clear 6-factor hierarchical solution.

Other researchers interpret Van Dierendonck's (2005) findings quite differently. Cheng and Chan (2005) point out that all but one of the fit indices were lower than what is considered acceptable. They also point out that Van Dierendonck assumed the co-variances of the 6-factor model to be zero, despite some research that indicates that the factors are related (Keyes et al., 2002; Ryff and Keyes, 1995). However, their hierarchical model included the co-variances estimates, resulting in comparisons that Cheng and Chan (2005) call "unfair."

While some research finds that the factors are correlated (Keyes et al., 2002; Ryff and Keyes, 1995), other research supports Ryff's distinctions between the dimensions. Clarke et al. (2001) found low correlations between the dimensions of PWB in their sample, ranging between -.04 and .39. The largest correlation, of .39, was between Environmental Mastery and Self-Acceptance. This provides some indication that while the dimensions are related, which might be expected because they load onto the same hierarchical factor, they might be distinct as Ryff (1989b) hypothesized.

In addition, while some research has found that the dimensions are correlated, Ryff and colleagues point out that there are still differences between the factors. For example, Ryff (1989b) found distinct age profiles for four of the dimensions, suggesting that while the dimensions were correlated, they are still different. Ryff found an incremental age profile for Autonomy and Environmental Mastery, and a decreasing age profile for the dimensions Personal Growth and Purpose in Life. Other research (Ryff, 1991) has replicated these findings, providing evidence that the different dimensions function differentially as individuals grow older.

Ryff and Keyes (1995) caution researchers from relying solely on factor analyses and correlations before coming to the conclusion that factors are indeed related. They explain that in

their study "data—not theory—suggested a possible five-factor model, which would combine indicators of self-acceptance and environmental mastery." However, further investigation indicates, in their interpretation, that these dimensions are unique. When they analyzed the dimensions using different analyses, such as life course profiles, "self-acceptance and environmental mastery exhibited distinct age profiles (the former showing little variation by age, the latter showing incremental age differences)." They urge researchers to carefully look at the data, using multiple methods of analysis, before drawing conclusions.

Failure to Support PWB Theory

Other research has failed to replicate the findings supporting the theory; many of the supporting studies were conducted by Ryff and colleagues. Kafka and Kozma (2002) go as far as criticizing the scales as "limited to face validity." They, along with other researchers, have serious reservations about the validity of the scale based on the conflicting research findings.

Criticism: PWB Is Not Composed of 6 Factors

One of the biggest criticisms of the scale is that it is not composed of 6 clear dimensions. Clarke et al. (2001) suggest that while the scale might be multi-dimensional, it might not be the clean six-dimensional form that Ryff (1989b) suggests. They found support for a 6-factor model, but the best fit was for modified 6-factor solution that allowed 4 items to load onto their dimension and another. Support for the modified 6 factor model suggests that some of the items might not clearly relate to only one factor.

While this study provides some evidence for Ryff's (1989b) theory, Kafka and Kozma (2002) found results that were substantially different. These researchers administered 20 questions per scale to participants. When they did not specify the number of factors for the

analysis to extract, the factor analysis found 15 separate factors. When a 6 factor solution was forced, it did not correspond with the six proposed dimensions of the PWB theory.

Hillson (1997) researched the structure of the PWB scale in two different samples of college students; students were administered an 84-item version of Ryff's PWB scale. Factor analyses failed to find a six dimensional model; instead, support was found for 3- and 4-dimensional models. The first sample found that items from the self-acceptance, environmental mastery, purpose in life, and autonomy subscales comprised one dimension. Additionally, one factor was made up of self-acceptance, purpose in life, and environmental mastery in the second sample. Other researchers (e.g. Springer and Hauser, 2002) have failed to produce a factor structure aligning with Ryff's (1989b) theory.

Criticism: PWB Factors Not Distinct

In addition, other debates have centered on whether or not the factors are distinct. Ryff (1989b) found that the correlations between the scales ranged from moderate to high (.32 to .76). While moderate correlations between the dimensions do not indicate a problem, Springer and Hauser (2002) state problems occur when dimensions are strongly correlated. For example, they found that Self-acceptance and Environmental Mastery exhibited a .76 correlation. Schmutte and Ryff (1997) replicated Ryff's (1989a) finding that some of the dimensions were highly correlated (e.g. Self-Acceptance and Environmental Mastery; Purpose in Life and Environmental Mastery; Purpose in Life and Self-Acceptance). These findings might indicate that the two dimensions are not distinct but highly related. Ryff (1989a) states that strong relationships between the dimensions might "raise the potential problem of the criteria not being empirically distinct from one another" (p. 1074).

Criticism: Dimensions Do Not Load Onto a 2nd Order Factor

Other researchers have had trouble demonstrating that the dimensions all load onto a hierarchical factor of psychological well-being. Springer and Hauser (2002) tested a six factor model without a second order factor; this model fit much better than a single factor model. However, when the model was combined with a higher ordered single factor, it fit substantially worse than the six factor model did. Cheng and Chan's (2005) research using the 4-item sub-scales found that while a 6-factor model was the best fit for their data, the factors failed to load onto a second, higher order factor. Clarke, Marshall, Ryff, and Wheaton (2001) also found that there were six factors of well-being that correspond with Ryff's theoretical framework outlined. In this study, the six-factor model was the best fit, indicating that well-being cannot be considered a one-dimensional construct. However, the factors failed to load onto a second, higher order factor; this indicates that all of the sub-scales do not relate to the same higher order construct.

Kafka and Kozma (2002) used a different method to see if there was support for Ryff's (1989b) hierarchical theory. They completed a factor analysis of the PWB scale, the Memorial University of Newfoundland Scale of Happiness, and the Satisfaction with life scale. This produced 3 factors: the first with environmental mastery, self-acceptance, purpose in life, and personal growth loading together; MUNSH and SWLS along with environmental mastery and self-acceptance loaded together; autonomy and personal relations loaded as the third factor. This study, along with those of Springer and Hauser (2002) and Cheng and Chan (2005), suggests that the dimensions do not all load onto the same hierarchical second order factor.

Potential Explanations for Mixed Results

PWB Scale Length

Ryff and other researchers have developed multiple versions of the PWB scale; the versions differ in terms of their number of items, ranging between 3 and 32 items for each sub-scale items. While the original PWB sub-scales were the longest, it was not necessarily practical for collecting data for research studies assessing a number of constructs. Researchers have discovered that the shorter versions of the sub-scales have clear 6-factor structures, but are not internally sound. However, longer versions of the sub-scales exhibit higher estimates of internal consistency, but fail to produce the clear 6-factor structure that Ryff suggests (Cheng & Chan, 2005). Van Dierndonck (2004) summarizes stating that reliability and factor analyses lead to conflicting results as to which is the best scale length; longer scales, with their improved internal consistency, suffer from poor factorial structure while the contrary is true for shorter scales.

Mode of Administration

Research on mode of survey administration suggests that individuals are more likely to become biased by the desire to seem socially desirable when they are in close contact with the survey administrator. Morum (1998) suggests that questions aimed at assessing psychological characteristics, like the PWB scale, as especially susceptible to this problem. These biases influence the data. For example, Pruchno & Hayden (2000) administered parts of the PWB scale in person, using the telephone, and using self-administered surveys. Self-administered surveys produced more negative reports than telephone or interviews in person.

Method of administration seems to influence the correlations between the subscales. Springer and Hauser (2002) found that telephone administration produced the lowest correlations between the sub-scales; so when there was a high need to be socially desirable, responses to the questions resulted in non-related sub-scales. Clarke et al. (2001) conducted interviews in person and found results similar to telephone administration. However, Springer and Hauser (2002)

found that there were very high correlations among self-administered instruments, even when artifacts were controlled for. This indicates that it might be problematic to use methods other than self-administration for the PWB survey; other methods might produce biased results which influence the psychometric properties of the scale.

Validity of Scale: Construct Validity

It is important that there is evidence establishing the construct validity of scales. Crocker and Algina (1986) state that this is demonstrated examining the convergent and divergent validity coefficients. A scale is said to have evidence of convergent validity when it correlates with measures that assess similar constructs. For the Psychological Well-Being scale, it should correlate with other measures of well-being. Because some researchers operationalize well-being as affect balance, happiness, and life satisfaction, the PWB scale should correlate with these measures, providing evidence of construct validity. Researchers have demonstrated that the PWB scales are related to these types of constructs. For example, Ryff (1989b) found that all sub-scales of the psychological well-being scale were significantly related to Bradburn's (1969) Affect Balance. Ryff et al. (1994) found that all sub-scales had a significant positive relationship with a single measure of happiness. Personal Growth, the least related, was correlated .16 with happiness while the strongest relationship was with Self-Acceptance. Ryff (1989b) found a significant positive relationships between the sub-scales and the Life Satisfaction Index (Neugarten et al., 1961), ranging from .26 (Autonomy) and .73 (Self-Acceptance). Ryff et al. (1994) found that all sub-scales were correlated with a single item measure of Satisfaction, ranging from .21 (Personal Growth) to .64 (Self-Acceptance).

In theory, individuals who experience positive well-being should not also be depressed. Researchers have looked to see if the scales of PWB negatively relate to measures of depression

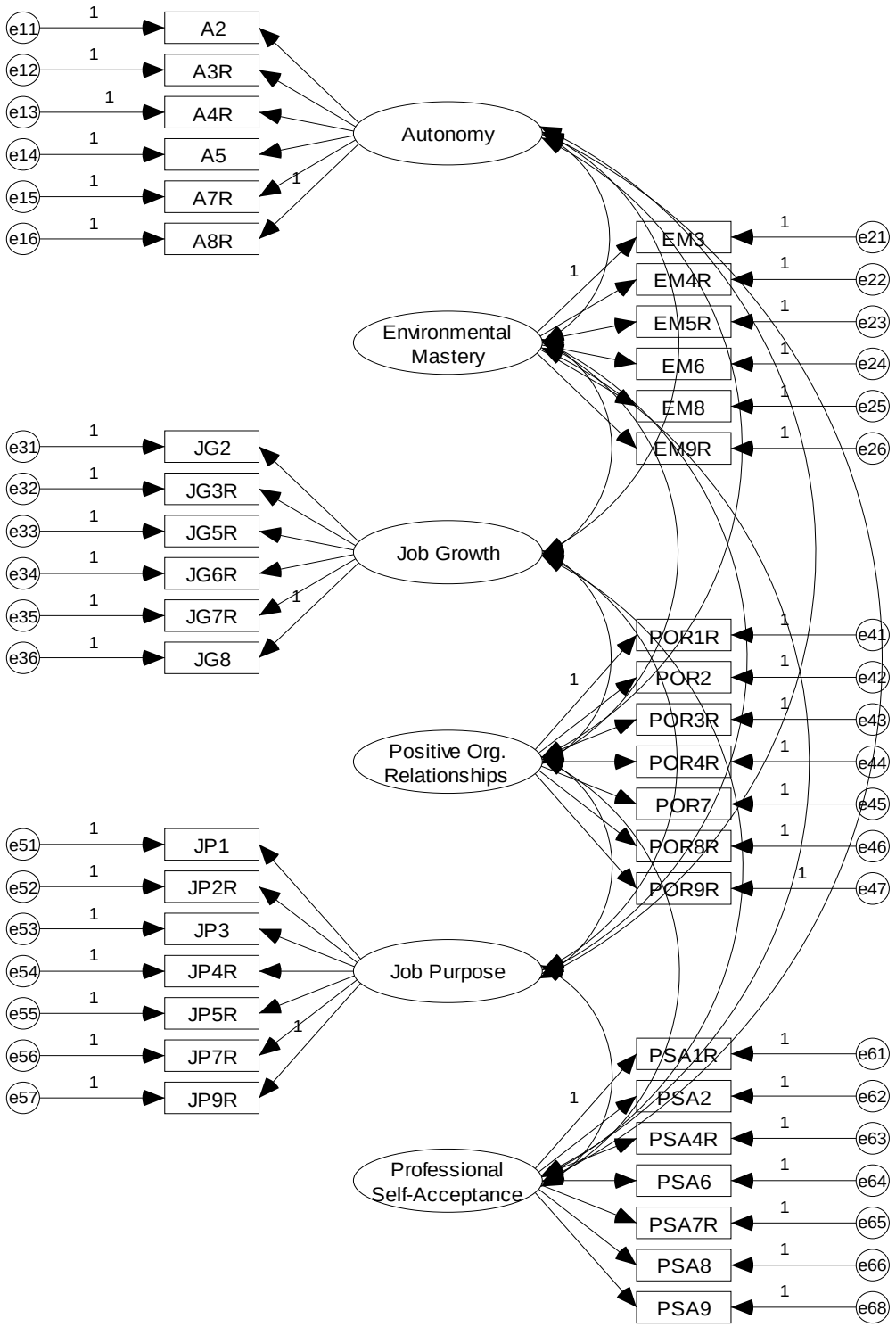
to establish the scales construct validity. Ryff (1989b) found that all PWB sub-scales were negatively related to the Zung Depression Scale. These correlations were between -.33 (Positive Relations With Others) and -.60 (Personal Growth and Environmental Mastery). In Ryff et al.'s (1994) study, depression, assessed using Radloff's (1977) Center for Epidemiological Study Depression Scale, was also negatively related to the sub-scales. Personal Growth was correlated -.22 with the measure while Self-Acceptance had a -.70 correlation. These studies provide evidence that the scales of Psychological Well-being are assessing positive functioning.

Recommendations for the Development of the Occupational Well-being Scale

The research on the properties of the PWB scale provides several suggestions for the development of a scale related to occupational well-being. First, the proposed scale assesses six dimensions: Positive Organizational Relationships, Professional Self-Acceptance, Job Autonomy, Job Purpose, Environmental Mastery, and Job Growth. It is expected that these will load onto a higher order factor, Occupational Well-being. However, some of the research on PWB suggests that there is the potential for factors to combine or fail to load on the second order factor. Because this scale is specific to one particular context, work, it is hypothesized that this will influence a cleaner factor structure. The failure to find a clean factor structure that is consistent with the proposed theory might suggest that the theory and dimensions be revisited for future research.

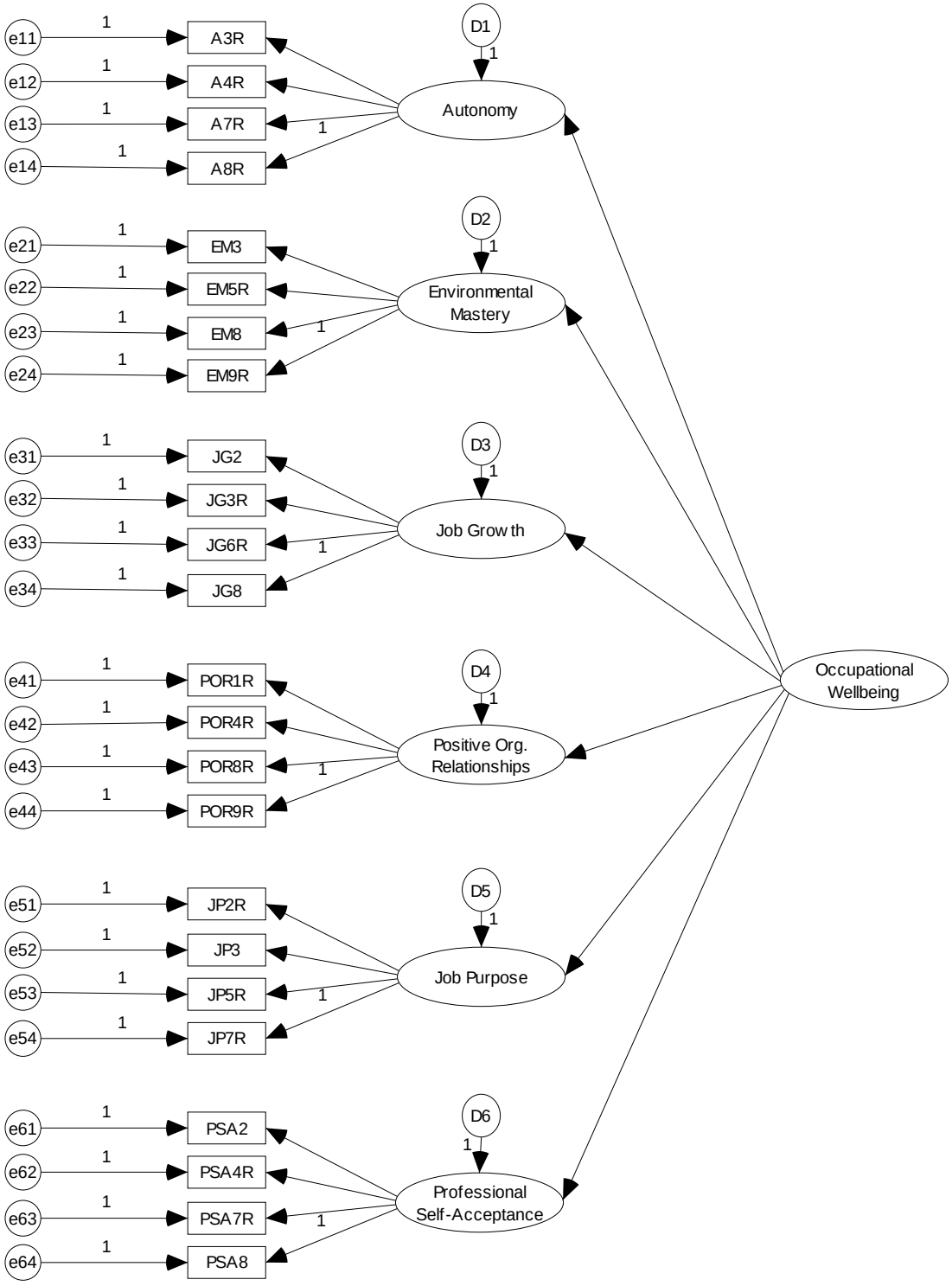
> *Hypothesis 1: Occupational well-being is comprised of six dimensions: Positive Organizational Relationships, Professional Self-Acceptance, Job Autonomy, Job Purpose, Environmental Mastery, and Job Growth (see Figure 1).*

Figure 1 Proposed First Order Model



Hypothesis 2: The six dimensions assessed by the scale load onto a higher order factor, Occupational Well-being (see Figure 2).

Figure 2 Proposed Second Order Model



Research on PWB found that long scales produced messy factor structures, but had strong reliability; shorter scales had low reliability and a clear factor structure. As a result, in order to maximize the internal consistency and produce an interpretable factor structure, the proposed study will aim to develop scales that are six to eight items each (as suggested by Van Dierndonck, 2004). This mid-length will also make administration of the scale easier for researchers conducting research based on multiple measures, and makes its use within organizations more likely. However, because of the two phases of item development used in this study, there is the potential for fewer items to survive these phases.

In order to address the mixed findings prevalent in the literature on PWB, the proposed scale was developed with these in mind. First, administration will be based on self-report during both administrations. This ensures that different methods of administration do not influence the findings.

Examining Occupational Well-Being within the Organization

Well-being research is criticized for examining the construct without considering the influence of the organizational environment. Adkins (1999) states organizations are comprised of a variety of relationships and environments within the same organization. As a result, organizations take on a variety of characteristics, both psychological and psychosocial, that influence occupational well-being. For example, work environments are interpreted by an individual so they become specific to the person as well as the organization. This means that psychologists must examine occupational well-being within the complicated psychosocial workplace dynamics. Failure to do so creates an incomplete conceptualization of occupational well-being. This research addresses these concerns by examining occupational well-being while considering the effects of psychological climate.

Researchers have been interested in studying environmental aspects of the organization in relation to other variables for years. Lawler (1992) and other researchers have claimed that one of the best ways to motivate workers is through forming a strong organizational environment. In addition, Kahn (1990) explains that individuals become more involved in their work when they see the potential for their psychological needs to be met, thus emphasizing the importance of the degree to which the work environment is safe and meaningful. While the work environment is important, Bowen and Ostroff (2004) point out individuals experience multiple environmental contexts within the same organization. Spreitzer, Sutcliffe, Dutton, Sonenshein, and Grant (2006) explain that the more proximal the environment, the greater effect that it has on an individual's behavior. Vogus (2004) states that this is because operating practices and work policies are often interpreted differently by each part of the organization. Vogus (2004) explains that it is also more realistic to believe that individuals will influence their proximal work environments rather than the larger organization.

Psychological Climate

While actual work environments may vary throughout the organization, so does the interpretation of them. James and Jones (1974) state that climate is a description of what people experience in the organization. Reichers and Schneider (1990) define climate as perceptions of the organizations related to informal or formal rewards, policies, practices, procedures, and routines. James and Jones (1974) note that it is very important to study climate rather than the physical work environment because it is the perceptions of what occurs that employees respond to rather than what actually takes place in the environment. Employees do not react directly to the work environment, but rather they first interpret it; as a result, they respond to their perceptions of the environment. Campbell, Dunnette, Lawler, and Weick (1970) explain

perception is a very important determinant of organizational outcomes, as it mediates the relationship between the work environment and specific outcomes.

More recently, Schneider (2000) states that our conception of climate has broadened. Instead of only being conceptualized as broad perceptions of the organization, which is often called molar climate, more specific climates are being researched. For example, some researchers are studying safety or service climates. Cronbach and Gleser (1965) explain that these climates differ in terms of their bandwidth. Specific climates reflect perceptions of a narrow aspect of the environment whereas global climates reflect more general environmental perceptions. Determining the type of climate that one should study depends on the outcomes of interest. Carr, Schmidt, Ford, and DeShon (2003) explain that those interested in general outcomes, such as performance on the job, should assess molar perceptions of climate. Conversely, those interested in more pointed outcomes should measure more specific perceptions of climate.

In addition, researchers have debated whether climate was an attribute of the individual or the organization. Researchers have addressed this concern by theoretically distinguishing between psychological and organizational climate. The former assesses climate from the individual level, while the latter measures climate at the level of the organization. James and James (1989) explain that psychological climate is how individual employees view their work environment. As a result, psychological climate is not an attribute of the physical work environment, but the individual's perceptions of this environment. Parker et al. (2003) point out it is important to focus on psychological climate because many of the most widely studied individual organizational outcomes (job performance, well-being etc.) are related to this construct.

James et al. (1990) explain that psychological climates can vary as a result of individual differences, situational attributes, and an interaction between the two. For example, individuals with the same manager who treats them similarly may perceive the environment differently because of their past experiences. Further, different styles of management throughout the same organization may lead to different actual environments, thus influencing the psychological climate that is created.

However, James (1982) points out if there is an agreement between individual perceptions then they can be aggregated to the team or organizational level. Since, as Reichers and Schneider (1990) state, organizational climate is most often defined as the shared perceptions of both formal and informal workplace procedures, practices, and polices, there must be agreement between individuals before the construct makes sense. If there is agreement at the individual level, Ashkanasy, Wilderom, and Peterson (2000) state that individual data can be aggregated to look at the climate of different groups within the organization (team, functional group, branch or enterprise). While researchers debate the exact methods of demonstrating individual agreement (e.g Glick, 1988; James 1982), Klein et al. (2000) state that researchers generally agree that some method indicating a consensus should be used before data is aggregated to levels higher than the individual level. Schneider et al. (2000) point out that most of today's researchers accept the distinction between psychological and organizational climate; and, as a result, that the aggregation of similar psychological climates to represent organizational climate.

Construct Specification Problems in the Climate Literature

While organizational and psychological climate are distinctly different, there have been some problems distinguishing between the two constructs along with differentiating between

them and other relevant constructs. Rousseau (1988) states this has long been a problem for researchers on climate. Guion (1973) has stated in the past climate provided researchers with little additional information because it overlapped heavily with job satisfaction. Since then, researchers have distinguished between the variables job satisfaction and climate. James and Jones (1974) differentiated between these variables, pointing out that climate was an employee's perception of their environment, while job satisfaction was an evaluation of these perceptions.

Though researchers have distinguished between these variables, there is still some degree of confusion surrounding research on climate. Parker, Baltes, Youngh, Huff, Altmann, Lacost, and Roberts (2003) point out terminology and construct specification have contributed to this confusion. For example, there are a variety of terms related to employees' perceptions of their work environment, including organizational climate, organizational culture, climate, and psychological climate to name a few. In some instances, researchers do not use the terminology that is consistent with the way that they operationalize the variables in their studies. Parker et al. (2003) noted that when they conducted their meta-analysis on psychological climate, they had to search through a number of studies that stated they were conducting research on organizational climate when they were really studying psychological climate. Carr's et al. (2003) recent meta-analysis illustrates this point; the researchers examined individual perceptions and outcomes, but discussed research related to organizational climate.

Climate Dimensions

Researchers have attempted to define the important aspects of climate, and many agree that it is a multidimensional construct. Litwin and Stringer (1968) proposed the first climate taxonomy, which posited 9 dimensions: structure, responsibility, reward, risk, warmth, support, standards, conflict, and identity. In the 1970s Carr, Schmidt, Ford, and DeShon (2003) state

Campbell and his colleagues identified four key features of climate, including: individual autonomy, structure, reward orientation, and warmth and support. Since these early efforts to identify the dimensions of organizational climate, researchers have come to mixed conclusions. Pritchard and Karasick (1973) identified 11 dimensions of climate, while Schnake (1983) found five. Kahn's (1990) research found six dimensions of psychological climate which indicate how psychologically meaningful and safe a particular employee might perceive the work environment to be. Brown and Leigh (1996) contended that there were 6 key facets of organizational climate. Ostroff et al. (2003) explain that the number of climate dimensions that have been identified continues to grow.

While climate is a multidimensional construct, many researchers have shown that a limited number of dimensions can account for most of the variance in climate. For example, James and James (1989) found that four second order factors accounted for most of the variance from 17 first order factors. Additionally, they found that all of the variables loaded onto a General Climate factor. This general factor was said to represent employees' overall view of "the degree to which the environment is personally beneficial versus personally detrimental (damaging or painful) to one's sense of well-being" (James et al., 1990, p. 53). As a result, how the work environment is interpreted potentially has an effect on well-being. The proposed study will examine how an individual's perceptions of the work environment influence their occupational well-being.

In the proposed study, perceptions of the environment will be conceptualized according to Kahn's (1990) operationalization of psychological climate. Brown and Leigh (1996) created dimensions aligned with Kahn's (1990) ethnographic study and proposed higher order factors. Kahn (1990) states two higher-order factors, psychological safety and meaningfulness, are

important to how the organizational environment is perceived. Kahn (1990) explains that psychological safety refers to an employee's ability to share themselves "without fear or negative consequences to self-image, status, or career." Brown and Leigh (1996) state the second-order factor is composed of three dimensions: supportive management, the extent to which an employee's supervisor provides support and is flexible; clarity, the extent to which the environment, tasks, and role are clearly structured; and self-expression, the extent to which employees can express themselves freely with other members of their organization. Kahn (1990) defines psychological meaningfulness as how rewarding, meaningful, or significant employees perceive their job to be. Brown and Leigh (1996) state that three dimensions also make up this second-order factor: meaningfulness of contributions, how significant individuals perceive their role and tasks are to the organization; recognition, the extent to which employees feel that their work is adequately acknowledged; and challenge, whether tasks are too easy or difficult. Kahn (1990) explains that these dimensions determine how employees perceive their work environment.

Proposed Model

This study focuses on one context within the organization, specifically the proximal work environment that is created by an individual's direct supervisor. Because other research has found that well-being is more closely associated with the psychological climate than shared perceptions of the environment, the study will examine the relationship between occupational well-being and climate at the individual level (Repetti, 1987).

In addition, because well-being is a broad construct, as suggested by Carr et al. (2003) the study will examine psychological climate from a more global perspective rather than using very specific aspects of climate. The research will examine six molar dimensions of climate proposed

by Kahn (1990). Finally, the proposed study adds to the body of literature of both occupational well-being and psychological climate. It specifies a model of how psychological climate influences occupational well-being, so that the organizational context is also studied.

Proposed Overall Model

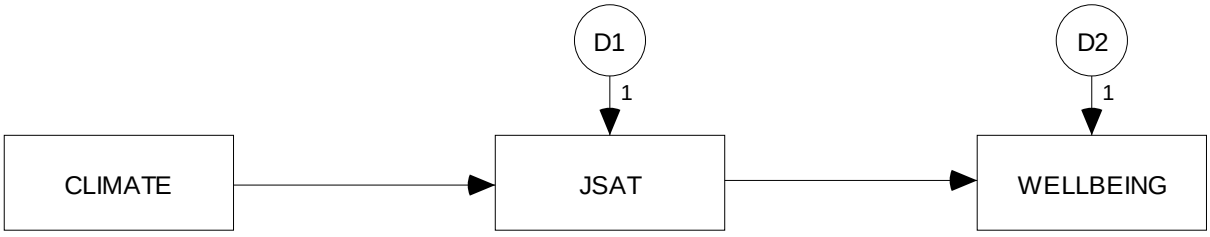
The proposed study hypothesizes that psychological climate influences job satisfaction; in turn, job satisfaction then influences occupational well-being. Despite the problems mentioned in this literature review, there is some initial support for this model, as research suggests that these three variables are related. The meta-analysis by Parker et al. (2003) found that psychological climate perceptions exerted a strong influence on attitudes and well-being.

Petterson and Arnetz (1997) present a theoretical model that is very similar to the model proposed in the current study. The researchers create a framework that suggests that the subjective work environment influences health through modifying variable job satisfaction. In their framework, subjective work environment is very similar to psychological climate. The variable is specified at an individual level and also emphasizes the importance of how the work environment is perceived. In addition, several of the dimensions are very similar to the psychological climate dimensions proposed in the current study. For example, Petterson and Arnetz (1997) incorporate goal clarity, leadership, and intellectual stimulation (which are similar to the dimensions job purpose, supportive management, and challenge that are used in the current study). In addition, while their model is not specific to occupational well-being, it does relate to general health and well-being. Finally, job satisfaction is also hypothesized to influence the relationship between subjective work environment and health. While this model was not empirically tested, the strong framework provides some initial theoretical support for the model proposed in the current study.

In addition, Carr, Schmidt, Ford, and DeShon (2003) propose a model of climate that reflects their review of the recent literature surrounding organizational climate and is consistent with other hypothesized models (e.g. James & Jones, 1974; Kopelman et al., 1990) and the proposed model. The Carr et al. model posits that organizational climate influences organizational outcomes by its effect on other cognitive and affective states. More specifically, the authors state that organizational climate, conceptualized according to Ostroff's (1993) taxonomy which operationalizes climate according to affective, cognitive, and instrumental dimensions, influences job satisfaction. In turn, the latter variables influence organizational outcomes including job performance, psychological well-being, and withdrawal behaviors at work. Their meta-analysis found support for this model. As suggested by previous research, the proposed model hypothesizes this relationship.

Hypothesis 3: Overall psychological climate influences job satisfaction, which, in turn, influences overall occupational well-being (see Figure 3).

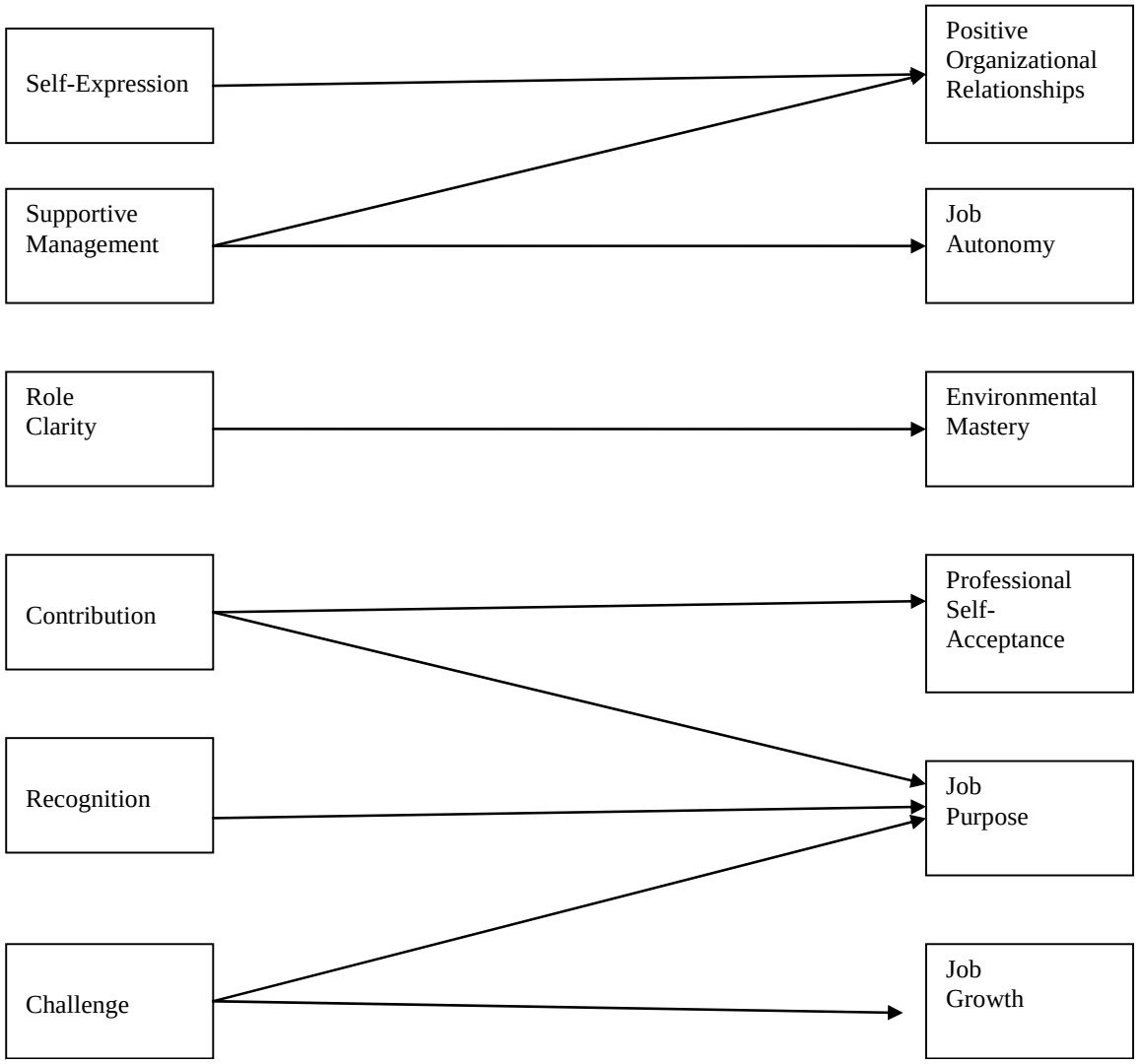
Figure 3 Proposed Mediated Model



Hypothesized Specific Paths

The proposed model specifies direct relationships between the dimensions of Psychological Climate and Occupational Well-being. There are 9 proposed paths which explain how the dimensions of Psychological climate influence the aspects of Occupational Well-being (see Figure 4). If supported, these paths can provide those interested in conducting organizational interventions with specific methods to improve occupational well-being. The antecedents of the problematic domains can be targeted by interventionists so that occupational well-being is improved.

Figure 4 Proposed Model of Direct Relationships between Climate and Well-being



Self-Expression to Positive Organizational Relationships

The model includes a path between Self-Expression and Positive Organizational Relationships. Kahn (1990) states employees' Self-Expression represents the degree to which employees feel that they can portray their true selves, personalities, and feelings. Employees that feel safe sharing these aspects of themselves with others in the organization are more likely to experience positive relationships. However, employees that feel as though they cannot truly express themselves are likely to experience fewer quality work relationships because they might feel guarded about how they express themselves or as though they can only share aspects of themselves with a few people.

Hypothesis 4a: There is a direct path from Self-Expression to Positive Organizational Relationships.

Supportive Management to Positive Organizational Relationships

It is hypothesized that when employees perceive their managers to be supportive, they will view the relationship positively. As a result, the model specifies a direct relationship between Supportive Management and Positive Organizational Relationships. Managers that are trustworthy and avoid being critical are likely to be perceived by their employees as exhibiting supportive behaviors. Quick, Quick, Nelson, and Hurrell (2003) explain managers who engage in these behaviors are likely to have employees that feel positively about this relationship. Non-supportive managers may be untrusting and critical, resulting in employees who feel less positively about their relationship with their manager. Cohen and Wills (1985) state the

relationship with their direct supervisor is one of the most important relationships for an employee.

Hypothesis 4b: There is a direct path from Supportive Management to Positive Organizational Relationships.

Supportive Management to Job Autonomy

The model also proposes that there is a direct relationship between Supportive Management and Job Autonomy. Brown and Leigh (1996) state supportive managers allow their employees to have control over the tasks they complete and provide them with the authority to make relevant decisions. They explain the managers who are supportive are also flexible, allowing subordinates to experiment with new approaches to projects and problems. These managers trust that their employees are capable of making decisions and developing novel solutions. As a result, they provide their employees with greater job autonomy than less supportive managers. Managers who are not supportive do not trust their employees to make the correct decisions and as a result limit their autonomy.

Hypothesis 4c: There is a direct path from Supportive Management to Job Autonomy.

Role Clarity to Environmental Mastery

The model includes a direct path between the psychological climate dimension Role Clarity and the occupational health dimension Environmental Mastery. Brown and Leigh (1996) explain that when role expectations are clear and consistent, the work environment is more predictable. However, when expectations for a role are ambiguous or inconsistent, the work

environment becomes unpredictable. Employees are not sure what to complete first or what standards need to be met; this gives them very little control over their work environment.

Hypothesis 4d: There is a direct path from Role Clarity to Environmental Mastery.

Contribution to Professional Self-Acceptance

A direct path is proposed between Contribution and Professional Self-Acceptance. Employees who perceive their contributions to be meaningful and significant are likely to feel more positively about themselves. Positive feeling about their contributions and self is likely to increase their feeling of worth and Professional Self-Acceptance. Employees who are not able to view their work as significant or meaningful in any way are likely to feel less important to the organization. This perception is likely to influence their feelings of Professional Self-Acceptance.

Hypothesis 4e: There is a direct path from Contribution to Professional Self-Acceptance.

Contribution to Job Purpose

An additional direct path from Contribution to Job Purpose is proposed by the model. This indicates that employees who view their contributions as meaningful are likely to feel that their job has a clear purpose. Brown and Leigh (1996) state these employees are likely to "believe they are contributing meaningfully toward organizational goals." When employees help the organization make progress to its goals, they are likely to view their job as very purposeful. Employees who do not feel that their contributions are significant are likely to question the purpose of their job.

Hypothesis 4f: There is a direct path from Contribution to Job Purpose.

Recognition to Job Purpose

The proposed model specifies a direct path between Recognition and Job Purpose. Kahn (1990) states when the organization recognizes and rewards employees' efforts, they are likely to view their work as meaningful and purposeful. However, when one's work is not recognized, this indicates to employees that their work is not as good or as important as work that is rewarded. This might make employees question the purpose of their jobs when they see other employees receiving recognition for their work.

Hypothesis 4g: There is a direct path from Recognition to Job Purpose.

Challenge to Job Purpose

The proposed model incorporates a path between Challenge and Job Purpose. This indicates that challenges lead to employees' perceiving their job to be purposeful. Brown and Leigh (1996) point out that because of the amount of resources, cognitive, physical, and emotional, it takes to ensure that challenges are met, those who meet challenging goals are more likely to perceive their job as meaningful and significant. Employees whose jobs lack challenge and remain too easy are likely to perceive their jobs as ones that anyone could do. As a result, they might view the contributions from their job as less important and their job as less purposeful.

Hypothesis 4h: There is a direct path from Challenge to Job Purpose.

Challenge to Job Growth

The model proposes that Challenge directly influences Job Growth. Brown and Leigh (1996) explain "growth in the work role can only occur when work is challenging." When employees are constantly challenged at work, they are more likely to have a positive perspective about job development and growth. These employees have been provided with many stretch assignments so that they have been able to broaden and improve their skill sets. However, employees that have not faced challenges at work or had the resources to achieve these goals might feel more pessimistic about their past and future growth experiences.

Hypothesis 4i: There is a direct path from Challenge to Job Growth.

Summary of Hypotheses

The purpose of the current study was to create a measure of occupational well-being and assess its psychometric properties. In line with this, the following hypotheses were proposed:

1. Occupational well-being is comprised of six factors: positive organizational relationships, professional self-acceptance, job autonomy, job purpose, environmental mastery, and job growth.
2. The six factors assessed by the scale will load onto a higher order factor, occupational well-being.
3. Overall psychological climate will influence job satisfaction, which, in turn, will influence overall occupational well-being.
4. Each dimension of psychological climate will have a direct effect on specific dimensions of occupational well-being.
    a. Self-expression will have a direct effect on positive organizational relationships.
    b. Supportive management will have a direct effect on positive organizational relationships.
    c. Supportive management will have a direct effect on job autonomy.
    d. Role clarity will have a direct effect on environmental mastery.
    e. Contributions will have a direct effect on professional self-acceptance.
    f. Contributions will have a direct effect on contribution to job purpose.
    g. Recognition will have a direct effect on job purpose.
    h. Challenge will have a direct effect on job purpose.
    i. Challenge will have a direct effect on job growth.

CHAPTER 2 - Method

Overview

The present study proposes a scale to assess Occupational Well-being based on the scale proposed by Ryff (1989b). This research follows the procedures outlined by Hinkin (1998) to ensure that the resulting scale is psychometrically sound. After the initial item generation, the scale was then administered to a sample in order to refine the instrument. The data collected during this phase of the research, termed the Pilot Administration, was used to conduct item and factor analyses; this component of the study assessed the structure and reliability of the scale. Revisions were made so that scale reliability was maximized and the scale's structure was clear. The revised scale derived from the Pilot Administration was then administered to participants in the Main Study; the purpose of this phase of research was to cross-validate the instrument and establish a nomonological network. As a result, the revised questionnaire was administered during the Main Study along with Brown and Leigh's (1996) scale assessing psychological climate and a scale based on Price and Mueller's (1986) work on job satisfaction.

Development of the Occupational Well-being Scale: Initial Scale

Ryff (1989b) states that researchers should establish a clear theoretical framework before creating measures and scales. Using a theoretical approach assures researchers that the derived instruments are theory based rather than empirically driven. This study used the extensive research conducted by Ryff (1989b) and colleagues as the basis for its theoretical framework. A literature search revealed that the six dimensions proposed by Ryff (1989b) also relate to occupational well-being. As a result, this study proposes a theory and measure of well-being based on Ryff's (1989b) work that is specific to the job context.

The six dimensions originally proposed by Ryff (1989b) were modified to be specific to the context of work. For example, the dimension "Positive Relationships with Others" was revised to become "Positive Organizational Relationships." This assured that while the constructs were specific to the context of organizational life, they remained aligned with the dimensions proposed by Ryff (1989b).

After identifying the theoretically driven constructs to be measured, Hinkin (1998) explains that to develop a scale researchers must first generate construct related items. Because this scale is based on the work of Ryff (1989b), consistent with Cheng and Chan (2005) the items included in the final version of Ryff's nine item subscales were used as a starting point. These items were translated from more general terms to be specific to the job. For example, the item "I often feel lonely because I have few people with whom to share my concern" was modified to become "I often feel lonely because I have few people at work with whom to share my concerns." While these items are very similar, the second specifically references an individual's experiences at work (see Appendix A).

The items were then revised so that the questionnaire was well-written. Hinkin (1998) states that items should be written as concisely as possible at a reading level that is appropriate for the respondent group. Items that were too difficult to understand were revised for ease of understanding. Hinkin (1998) also cautions researchers from including "double-barreled" questions in the scale. Items that reference more than one item will not provide information that is easily interpretable. Items were revised to ensure that only one issue is addressed.

In addition, the response options were modified slightly. Ryff (1989b) used a six point Likert scale for the responses, ranging from "strongly agree" to "strongly disagree." However, Thorndike (2005) suggests that a five-point Likert scale is the most conventionally used. In

addition, Hinkin (1998) states that reliability increases as intervals are added until 5 points; after five points, this effect tapers off. As a result, both Thorndike (2005) and Hinkin (1998) suggest that researcher utilize a five-point Likert scale. This change does not substantially change the scale, so it maintains its similarity to the scale used by Ryff (1989b).

Pilot Administration

Participants

Thorndike (2005) explains that after the survey instrument has been designed, it is necessary to administer it to a group of pilot participants. Hinkin (1998) states the participants should represent the population of interest. Because the proposed instrument assesses occupational well-being, the participants of the pilot study were employed full time. This ensures that the results are generalizable to other samples of employed individuals. The generalizability would be questionable if students or part-time student employees were used. Guadagnoli and Velicer (1988) point out that a sample of 150 participants is adequate for exploratory factor analysis, but Hinkin (1998) states that 200 participants is a more conservative approach.

Email invitations were issued to 1,600 participants. 465 participants attempted the survey, while 438 completed the occupational well-being scale. In order to come up with a sample of full-time employees, 37 participants who were part-time employees (N = 25) or unemployed (N = 12) were removed from the sample. This resulted in a sample of 401 of participants who were full-time employees and completed the survey. This reflects a 25.06% response rate.

Procedure

Participants were identified by StudyResponse, an organization with a large base of employed individuals who voluntarily complete surveys. Individuals join StudyResponse and commit to complete surveys they are assigned to in exchange for the opportunity to be entered into a drawing for prizes. StudyResponse sent an invitation to participate in the survey to potential participants. The invitation contained a link to complete the survey which was live for 2 weeks. Participants were sent two reminder emails; one was emailed after one week, and the second was sent the day before the survey link closed. A list of participants who completed the survey was sent to StudyResponse, who then in turn help drawings for the gift certificates.

Scale Development: Revised Scale

Hinkin (1998) states the pilot study should assess how well the proposed items "confirmed expectations regarding the psychometric properties of the scale." A confirmatory factor analysis was conducted to determine the number of factors contained in the scale as well as how well items relate to each factor. Items that failed to load on their hypothesized dimension or related to items in other dimensions were deleted from the scale.

Item analyses were conducted on the dimensions suggested by the factor analysis. Thorndike (2005) explains that assessments of internal consistency must be conducted on measures that are one dimensional. As a result, the reliability of each dimension was assessed. It is important that an instrument has high reliability, so items that decrease the reliability were removed. These revisions produced a more psychometrically sound version of the occupational well-being scale.

Main Study

Participants

Electronic invitations were emailed to 1,600 participants. While 543 participants attempted the survey, 494 completed the occupational well-being scale. 42 participants who were employed on a part-time basis (N = 24) or unemployed (N = 18) were removed from the sample, resulting in a sample of 452 full-time employees who completed the scale in its entirety. This reflects a 28.25% response rate.

Measures

Occupational Well-being

The scale resulting from the revisions suggested by Pilot Administration, which included four item subscales, was used in the Main Study.

Psychological Climate

Brown and Leigh (1996) developed a 22-item scale based on Kahn's (1990) research that assesses psychological climate (see Appendix B). This scale assesses six dimensions of psychological climate: supportive management, clarity, self-expression, perceived contribution, recognition, and challenge. Brown and Leigh (1996) found that the reliability of the dimensions were adequate, and ranged from .70 to .85. These dimensions loaded onto a single second order factor, psychological climate, indicating an overall score for psychological climate can be calculated.

Job Satisfaction

Job satisfaction was measured by assessing the 3 dimensions that Price and Mueller (1986) state are important: satisfaction with work, co-workers, and supervision (see Appendix C). Ratings on a five-point Likert scale were used; these range from "very unsatisfied" to "very satisfied." Wright and Croponzano (2000) reported a coefficient alpha of .63 using this scale.

It is important to note that there were just three questions used which effects the observed reliability of the instrument. Researchers justify combining these aspects of job satisfaction into a total combined score (Wright & Bonett, 1991). As a result, a composite job satisfaction score can be used to examine its relationship with occupational well-being and psychological climate.

Procedure

The procedure utilized for the Main Study was identical to that of the Pilot Administration, except the additional scales were also included in the survey. Data was collected concurrently for the Pilot Administration and Main Study in an effort to minimize historical effects.

CHAPTER 3 - Results

First-order confirmatory factor analysis (CFA), using structural equation modeling, was conducted to evaluate the first hypothesis. The second hypothesis was tested, again using structural equation modeling procedures, by performing a second-order CFA. Structural equation modeling was utilized to determine the mediating effect of job satisfaction on psychological climate and occupational well-being; it was also used to test the set of relationships specified in hypothesis four.

The demographic variables of the sample are first described; descriptive statistics related to the subscales used in the study are then presented. Finally, the results of the hypotheses tests are discussed.

Descriptive Statistics

The demographic variables describing both samples used in the study are presented in Table 1. Sample 1 was used to first assess the psychometric properties of the proposed occupational well-being scale as well as assess several revised models; it was also used to evaluate the fit of a first order confirmatory factor analysis (CFA) as well as that of a second order CFA. The fit of a second order CFA was cross-validated in Sample 2; this sample was also used to assess the fit of the nomonological network. Slightly more females (55.1% in Sample 1; 58.6% in Sample 2) than males participated in the studies. Nearly a quarter of all participants were between the ages 25 to 30 (20% in Sample 1; 25% in Sample 2) as well as had worked in their current job between 3 to 5 years (25.9% in Sample 1; 23.5% in Sample 2). Fewer respondents were between 18 and 24 (3.7% in Sample 1; 3.3% in Sample 2) or older than 66 (0% in Sample 1; .4% in Sample 2). In addition, most people had been in position for at least a year

(87% in Sample 1; 84.3% in Sample 2) indicating they had enough time to evaluate their occupational well-being in relation to their current job.

A Mann-Whitney test was conducted on the demographic variables included in the study to assess whether the two samples could be considered similar. The results indicted that the samples were not composed of statistically different groups based on the three demographic variables collected in the study. For gender, the Mann-Whitney U was 87439.5, $p = .301$; the data collected on age groups revealed a Mann-Whitney U of 85616, $p = .157$. Both samples were composed of individuals with similar distributions of tenure in their current position, Mann-Whitney U = 85257, $p = .128$. Because the samples are similar, the results should cross-validate if the scale is not sample specific.

Table 1 The Demographic Variables Describing the Two Samples

Variable	Sample 1 (N = 401)		Sample 2 (N = 452)	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	180	44.9	187	41.4
Female	221	55.1	265	58.6
Age				
18 to 24	15	3.7	15	3.3
25 to 30	80	20.0	113	25.0
31 to 34	59	14.7	66	14.6
35 to 40	77	19.2	85	18.8
41 to 45	52	13.0	51	11.3
46 to 50	50	12.5	51	11.3
51 to 55	40	10.0	48	10.6
56 to 60	22	5.5	15	3.3
61 to 65	6	1.5	6	1.3
66 to 70	0	0	2	.4

Table 1 Continued

Variable	Sample 1 (N = 401)		Sample 2 (N = 452)	
	Frequency	Percentage	Frequency	Percentage
Time in current job				
Less than 3 mos	12	3.0	17	3.8
3 mos to 1 year	40	10.0	54	11.9
1 to 2 years	60	15.0	85	18.8
3 to 5 years	104	25.9	106	23.5
6 to 10 years	87	21.7	82	18.1
11 to 15 years	34	8.5	42	9.3
Over 16 years	64	16.0	66	14.6

Descriptive statistics for the scales used in the study, including means, standard deviations, and skewness values, are presented in Table 2. These describe the final revised subscales of occupational well-being as well as job satisfaction and the psychological climate subscales. For occupational well-being, the subscale job autonomy had the lowest mean for both samples (3.56 in Sample 1; 3.53 in Sample 2) while job growth had the highest mean (3.82 in Sample 1; 3.77 in Sample 2). In addition, the variance of the occupational well-being subscales was similar; environmental mastery exhibited the least variance (SD = .69 in Sample 1; SD = .63 in Sample 2), and positive organizational relationships had the greatest variance (SD = .77 in Sample 1; SD = .78 in Sample 2). The subscales of psychological climate had composites for each dimension that were also similar. Respondents reported the lowest average responses on the dimension role clarity (3.58 in Sample 1; 3.42 in Sample 2); however, the dimension contribution had the highest means (3.98 in Sample 1; 3.93 in Sample 2). Overall, participants were fairly satisfied with their jobs, as the composites were close to four (3.83 in Sample 1; 3.73 in Sample 2). The variables had normal distributions as the skewness values of all variables were within the acceptable range.

Independent sample t-tests were conducted to determine if the two samples responded similarly to the subscales included in the study. Overall, both samples had similar composites for the subscales included in the Occupational Well-being subscale. However, the samples had statistically different composite scores for two of the Psychological Climate subscales (Self-Expression: $t = 2.005$, $p = .045$; Recognition: $t = 2.006$, $p = .045$). In addition, the Supportive Management composites were borderline significant ($t = 1.824$, $p = .069$). However, the composite scores for the two samples did not differ for the other subscales, which included Role

Clarity and Contribution. Finally, the overall composite scores for Occupational Well-being, Job Satisfaction and Psychological Climate were not different.

Table 2 Descriptive Statistics for Climate, Satisfaction, and Well-being Subscales

Subscale	Sample 1 (N = 401)			Sample 2 (N = 462)		
	Mean	SD	Skew	Mean	SD	Skew
Well-being						
Job autonomy	3.56	.72	-.31	3.53	.71	-.06
Env. mastery	3.70	.69	-.29	3.67	.63	-.29
Job growth	3.82	.71	-.45	3.77	.67	-.47
Org. relations	3.57	.77	-.41	3.59	.78	-.50
Job purpose	3.76	.73	-.48	3.75	.70	-.53
Self-acceptance	3.66	.77	-.42	3.63	.76	-.43
Climate						
Self-expression	3.73	.81	-.58	3.63	.77	-.56
Supportive mgt	3.72	.78	-.70	3.62	.83	-.88
Role clarity	3.58	.90	-.56	3.42	.92	-.79
Contribution	3.98	.73	-.62	3.93	.73	-.97
Recognition	3.62	.84	-.46	3.50	.88	-.66
Challenge	3.71	1.08	-.65	3.63	1.04	-.61
Job satisfaction	3.83	.79	-.64	3.73	.84	-.82

Overall Procedure

AMOS 7 was used to conduct structural equation modeling in an effort to evaluate the hypotheses of the current study. Overidentified models were utilized meaning the number of data points was greater than the number of estimatable data points. Bryne (2001) states that all latent variables in the model need to have their scales determined as these variables are not observable. In order to address this, it is conventional to set one factor loading parameter to any non-zero value. Typically, this is done by assigning one path in each latent construct to one. For this study, AMOS randomly assigned which paths were fixed to one.

Several criteria were examined to assess the fit of each model; some of these criteria focus on the whole model while others look at the fit of individual parameters (Byrne, 1994). Both types of criteria are reported to assess the adequacy of model fit.

To assess overall model fit, Chi-square statistics as well as several goodness-of-fit indices were used (Hu & Bentler, 1995; Hu & Bentler, 1999). Chi-square statistics are one of the first measures of fit that researchers look to when evaluating models. This statistic assess whether or not the sample covariance matrix is a good fit for the covariance matrix of the implied model. Significant Chi-squares indicate that there is a lack of fit. Because it is computed by multiplying the F by the sample size minus one (F * (N – 1)), it is extremely sensitive to sample size. As a result, researchers with large sample sizes are likely to encounter larger Chi-square statistics; this means that meaningless differences might cause the model fit to be considered inadequate. In addition, the complexity of the model also influences the Chi-square statistic, as complicated models often result in large Chi-squares. As a result, the Chi-square statistic can often be considered misleading. When sample sizes are over 200, researchers should consider other tests for a better understanding of their model's fit. One such approach is to look at the Relative

Chi-square; this is assessed by dividing the Chi-square by the degrees of freedom. Results ranging from two to five indicate support for the model.

As a result, other measures of model fit were utilized since both samples could be considered large. Of particular interest were the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Parsimony Goodness of Fit Index (PGFI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA). Particularly in these cases, Widaman and Thompson (2003) recommend the use of practical fit indices such as the RMSEA and CFI which are less sensitive to sample size. The CFI, other wise known as the Bentler Comparative Fit Index, compares the fit of the hypothesized model with that of the independence model (or the null model when the latent variables are not correlated). Statistics equal to or greater than .90 are considered acceptable; this indicates that the given model can replicate at least 90% of the covariance in the data. The RMSEA, one of the most popular fit indices, is also one of the ones least influenced by the number of participants. This measure does not require comparison to a null model. Schumacker and Lomax (2004) suggest that models are considered a good fit to the data if RMSEA is less than or equal to .05; alternatively, the model is considered an acceptable fit when RMSEA is less than or equal to .10. Other researchers, such as Hu & Bentler (1999), are more conservative and state that RMSEA must be equal to or less than .06 for the fit to be considered adequate. Because of the exploratory nature of the study, the more lenient standard of REMSA = .1 will be used to evaluate the models.

While RMSEA does correct for model complexity by using degrees of freedom in its calculation, it is not a perfect correction; degrees of freedom is not a perfect indicator of model complexity. As a result, the RMSEA should be interpreted in light of the PGFI, which also addresses model complexity. Newsom (2006) recommends evaluating models independent of

parsimony, but favoring those approaches that are the most simple. This approach doesn't penalize complicated models, but looks for simpler models that are just as appropriate. Byrne (2001) recommends that this index be above .50. Schumacker and Lomax (2004) suggest that the GFI and AGFI, which also adjusts for degrees of freedom, be at least .90. However, more conservative researchers are now suggesting that it be at least .95. Hu and Bentler (1999) state that while these were once the favored fit indices, they are becoming less relied upon.

The fit of the individual parameters was also assessed. The size of the path coefficients was evaluated; their magnitude shows if the indicator variables loaded significantly to their hypothesized constructs when the measurement model was evaluated. The structural model was assessed by reviewing the magnitude and direction of the path coefficients to see if they were consistent with the hypotheses as well as with the existing literature (Byrne, 1994). The statistical significance of each parameter was reported; paths were considered a good fit when $p < .05$ (Byrne, 1994). Modification indices for each path were examined in order to determine whether the covariance between non-theoretically related paths should be added to the model; because of criticism in the literature (Springer and Hauser, 2002), these were not added to the model. Instead, these variables were examined to determine if it would be best to remove them from the model.

Because of the above arguments, less attention was paid to the Chi-square statistic as well as the absolute fit indices. Models were said to fit the data in the following circumstances: the comparative fit index values were over the acceptable cut-off value of .90 (Hu & Bentler, 1999), the parsimony-adjusted index value was above .50 (Byrne, 2001), and the RMSEA value was below the acceptable criterion of .10 (Schumacker & Lomax, 2004). When models were not a good fit, individual paths were examined to identify where potential fit improvements could be

made. The modification indices indicated the degree to which the chi-square would be reduced if the variable was allowed to correlate with another variable. Adjustments, by removing non-theoretically related items, were made when possible to improve model fit.

Hypothesis 1: The Factorial Structure of Occupational Well-being

Based on previous research as well as a review of related occupational well-being literature, it was hypothesized that the construct would consist of six factors: positive organizational relationships, professional self-acceptance, job autonomy, job purpose, environmental mastery, and job growth. A first-order confirmatory factor analysis (CFA) was conducted using Sample 1 to determine whether items used in the occupational well-being scale would load onto the six hypothesized factors.

Proposed Model

The model proposed by the current study, with nine indicator variables utilized to measure each latent construct, could not be tested. Commonly, when there is a high degree of multicolinearity the model is unsolvable. This is because the resulting covariance matrix was not positive definite. When variables or sets of variables are very highly correlated with one another, the resulting matrix often has negative eigenvalues; in these cases, the matrix is not positive definite. Ullman (2001) suggests that items that are highly correlated with others be removed from the model to reduce the multicolinearity.

Consistent with these suggestions, correlations were calculated to evaluate the relationships between variables. Based on these results as well as the reliability analyses, one to three indicator variables were removed from each latent construct. For example, Job Purpose 8 was significantly correlated with all items in the original scale except two. In addition, it was the item that detracted the most from its subscale in the reliability analyses. Removing the item would not significantly reduce the reliability of the subscale and the item had the lowest corrected item total correlation; this indicates that Job Purpose 8 might better relate to other items rather than those included in the Job Purpose subscale. It was subsequently removed. Additional items were removed that correlated with many other items and also reduced the

reliability of their subscales. These modifications resulted in a revised model, depicted in Figure 5, which was then evaluated; six to eight items were retained to represent each latent variable.

First Revised Model

The revised model had some opportunities to better fit the data: $\chi 2 = 2017.82$, $p = .00$ (CFI = .78, PGFI = .64, and RMSEA = .07). The parsimony-adjusted measure was over the .50 threshold (Byrne, 2001) and the RMSEA is considered acceptable by some (Schumacker & Lomax, 2004). However, the model Chi-square value was statistically significant and fairly high; however, the Relative Chi-square was 3.10. The actual Chi-square, coupled with absolute and comparative fit indices below the acceptable benchmark of .90 (see Table 3), indicated that the model should be revised to better fit the data.

As a result, the modification indices for paths were examined as well as the factor loadings. While all paths loaded significantly, it was determined that several paths failed to load as well on the latent variables as other subscale indicators; in addition, the modification indices indicated that the model chi-square could be improved if several variables were allowed to covary with non-theoretically related variables. For example, the Autonomy 2 did not load as well onto overall Autonomy as other variables in the subscale. In addition, the modification indices indicated that the chi-square could be substantially improved if it were allowed to relate to an item in professional self-acceptance. Because these two items were not conceptually related and the loading value for Autonomy 2 was lower than others in the subscale, it was removed. Additional items were identified for potential removal from the scale, including A5, EM4R, EM6, JG5R, JG7R, POR2, POR3R, POR7, JP1, JP4R, JP9R, PSA1R, PSA6, and PSA9. These items did not load as highly onto their respective latent variables as other items in the

subscales and their modification indices indicated that the model would be improved if they were allowed to relate to items in other dimensions.

While the measures of model fit and modification indices indicated that the model had the potential to be improved, all indicator variables loaded significantly onto their respective latent constructs (see Table 4). Each path had a loading of at least a .4. This indicates all items assess their proposed latent constructs.

In addition, the internal consistency for each revised subscale was adequate, ranging from .71 (autonomy) to .82 (professional self-acceptance). The original nine item subscales ranged from .66 (autonomy) to .83 (positive organizational relationships). Despite the reduction in items per subscale, as well as the cumulative covariance terms, the reliability was not drastically reduced. In fact, for autonomy the reliability improved. This indicates that the subscales were almost as internally consistent as the nine item subscales, despite the fewer items.

However, all of the subscales were significantly correlated with each other (see Table 5). The smallest observed correlation was .63 (job autonomy and job purpose; job autonomy and professional self-acceptance); the largest correlation, between job growth and job purpose, jumped to .94. There were two other pairs of correlations over .90 (environmental mastery and positive organizational relationships; professional self-acceptance and environmental mastery). This indicates that the overlap between some of the constructs was quite substantial.

Figure 4 Factorial Structure of the First Revised Model

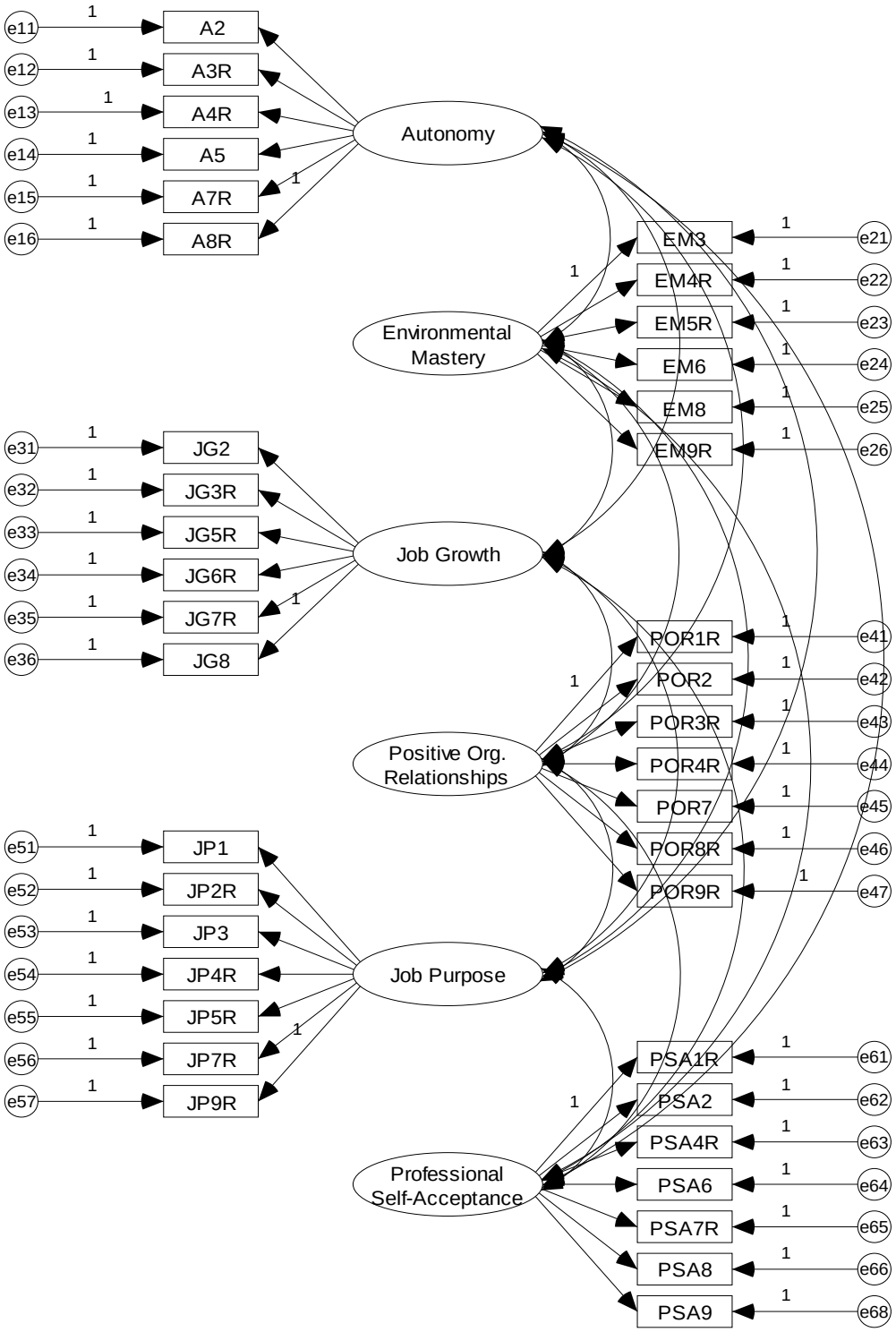


Table 3 Goodness of Fit Indices for First Revised Model's First-Order CFA

	Value
Chi-square	
Value	**2017.82**
df	**650.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.73**
AGFI	**.70**
Parsimony-adjusted measure	
PGFI	**.64**
Comparative fit indices	
CFI	**.78**
IFI	**.78**
RMSEA	**.07**

Table 4 Factor Loadings for the Revised First-Order CFA Model

Path	Beta	t-value	Sig.
Autonomy (.71)*			
A2	**.40**	**6.43**	**.000**
A3R	**.58**	**8.45**	**.000**
A4R	**.54**	**8.03**	**.000**
A5	**.43**	**6.75**	**.000**
A7R	**.69**	**9.29**	**.000**
A8R	**.56**	**Fixed**	**Fixed**
Environmental mastery (.78)*			
EM3	**.44**	**Fixed**	**Fixed**
EM4R	**.67**	**8.28**	**.000**
EM5R	**.64**	**8.08**	**.000**
EM6	**.65**	**8.14**	**.000**
EM8	**.59**	**7.79**	**.000**
EM9R	**.67**	**8.26**	**.000**

**** Internal coefficient alpha for subscale in parenthesis***

Path	Beta	t-value	Sig.
Job growth (.72)*			
JG2	**.64**	**10.95**	**.000**
JG3R	**.63**	**10.87**	**.000**
JG5R	**.46**	**8.31**	**.000**
JG6R	**.50**	**8.83**	**.000**
JG7R	**.45**	**8.05**	**.000**
JG8	**.65**	**Fixed**	**Fixed**
Positive org. relationships (.82)*			
PO1R	**.57**	**Fixed**	**Fixed**
POR2	**.64**	**9.87**	**.000**
POR3R	**.67**	**10.21**	**.000**
POR4R	**.57**	**9.08**	**.000**
POR7	**.64**	**9.88**	**.000**
POR8R	**.68**	**10.27**	**.000**
POR9R	**.70**	**10.48**	**.000**

**** Internal coefficient alpha for subscale in parenthesis***

Path	Beta	t-value	Sig.
Job purpose (.78)*			
JP1	**.53**	**10.08**	**.000**
JP2R	**.67**	**12.68**	**.000**
JP3	**.58**	**10.93**	**.000**
JP4R	**.46**	**8.71**	**.000**
JP5R	**.59**	**11.20**	**.000**
JP7R	**.74**	**Fixed**	**Fixed**
Professional self-acceptance (.82)*			
PSA1R	**.52**	**Fixed**	**Fixed**
PSA2	**.75**	**10.11**	**.000**
PSA4R	**.57**	**8.62**	**.000**
PSA6	**.55**	**8.44**	**.000**
PSA7R	**.72**	**9.91**	**.000**
PSA8	**.73**	**9.95**	**.000**
PSA9	**.64**	**9.30**	**.000**

**** Internal coefficient alpha for subscale in parenthesis***

Table 5 Correlations between Factors in the First Revised CFA Model

Relationship	R	t-value	Sig.
Job autonomy and:			
Environmental mastery	**.73**	**6.03**	**.000**
Job growth	**.74**	**7.06**	**.000**
Positive organizational relationships	**.67**	**6.55**	**.000**
Job purpose	**.62**	**6.80**	**.000**
Professional self-acceptance	**.63**	**6.19**	**.000**
Environmental mastery and:			
Job growth	**.82**	**6.68**	**.000**
Positive organizational relationships	**.90**	**6.57**	**.000**
Job purpose	**.82**	**6.95**	**.000**
Professional self-acceptance	**.93**	**6.40**	**.000**
Job growth and:			
Positive organizational relationships	**.74**	**7.41**	**.000**
Job purpose	**.95**	**9.14**	**.000**
Professional self-acceptance	**.77**	**7.20**	**.000**
Positive organizational relationships and:			
Job purpose	**.74**	**7.78**	**.000**
Professional self-acceptance	**.76**	**6.88**	**.000**
Job purpose and professional self-accept	**.79**	**7.60**	**.000**

Second Revised Model

In an effort to improve the fit of the model to the data, further revisions were made; the paths identified before were removed from the model. The resulting model, composed of four item subscales, is depicted in Figure 6.

These revisions produced a model that better fit the data: $\chi 2 = 735.50$, $p = .00$ (CFI = .86, PGFI = .67, and RMSEA = .07). Although still significant, the Chi-square value of the second revised model was much lower than that of the first revised model ($\chi 2 = 2017.82$). As large samples are more likely to see large chi-square values, additional fit indices were examined to assess model fit. The Relative Chi-Square was considered acceptable, as it was 3.10. The parsimony-adjusted measure increased in comparison to the first revised model (PGFI = .64) and was considered acceptable. As Table 6 demonstrates, the absolute and comparative fit indices were much higher than those produced by the first revised model; the reduction in items resulted in indices in the .80 range instead of the .70 range. In addition, the RMSEA value was considered acceptable for this model (Hu & Bentler, 1999).

Consistent with the first revised model, all of the indicator variables loaded significantly onto their respective latent constructs (see Table 7). The Beta weights ranged from .43 to .74, indicating that the items still related to their hypothesized factors. In addition, all factors were significantly correlated with each other (see Table 8). The increased number of items removed from the subscales didn't affect the strength of the correlations. For example, the smallest correlation between subscales, autonomy and job purpose, dropped to .58; these subscales also had the smallest correlation when 6-8 items were used, but it was .63. The largest correlation, between job growth and job purpose, was .93; in the 6-8 item subscales, this same pair had the largest correlation of .94.

Although the second revised model only adequately fit the data, no further adjustments were made. In previous research, the internal consistency of the subscales dropped significantly when three item subscales were used (Cheng & Chan, 2005). With four items, the internal consistencies of the subscales were around .70 (see Table 7); this is considered acceptable by some researchers. If additional items were dropped from each subscale, model fit might have improved while reliability was sacrificed.

Table 6 Goodness of Fit Indices for the Second Revised First-Order CFA Model

	Value
Chi-square	
Value	**735.50**
df	**237.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.85**
AGFI	**.81**
Parsimony-adjusted measure	
PGFI	**.67**
Comparative fit indices	
CFI	**.86**
IFI	**.86**
RMSEA	**.07**

Table 7 Factor Loadings for the Second Revised CFA Model

Path	Beta	t-value	Sig.
Autonomy (.70)*			
A3R	**.63**	**8.70**	**.000**
A4R	**.54**	**7.88**	**.000**
A7R	**.68**	**9.07**	**.000**
A8R	**.56**	**Fixed**	**Fixed**
Environmental mastery (.70)*			
EM3	**.43**	**7.94**	**.000**
EM5R	**.70**	**13.02**	**.000**
EM8	**.57**	**10.56**	**.000**
EM9R	**.73**	**Fixed**	**Fixed**
Job growth (.66)*			
JG2	**.68**	**11.89**	**000**
JG3R	**.62**	**10.92**	**.000**
JG6R	**.43**	**7.79**	**.000**
JG8	**.70**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

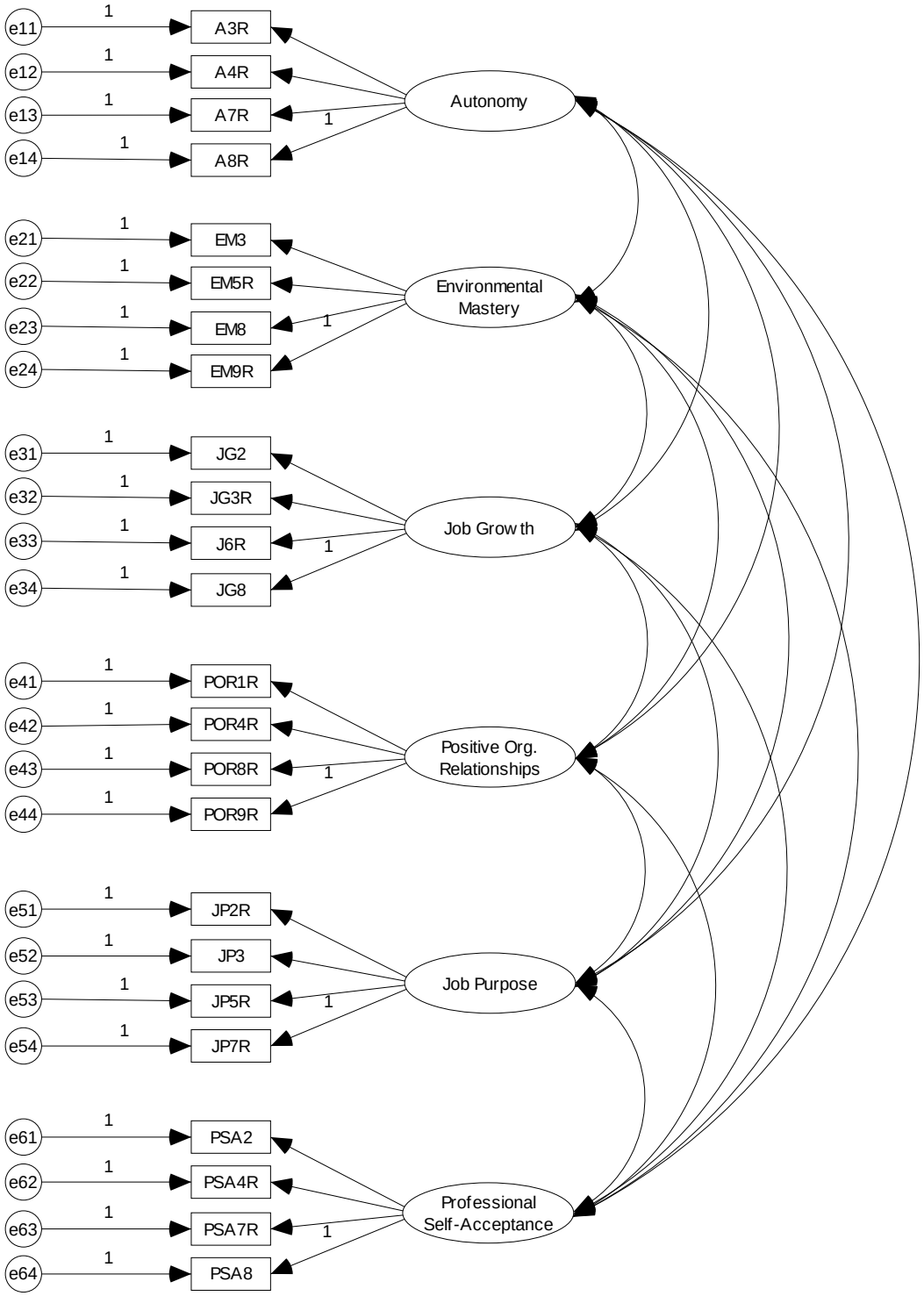
Path	Beta	t-value	Sig.
Positive org. relationships (.73)*			
PO1R	**.57**	**9.90**	**.000**
POR4R	**.59**	**10.15**	**.000**
POR8R	**.70**	**11.80**	**.000**
POR9R	**.69**	**Fixed**	**Fixed**
Job purpose (.73)*			
JP2R	**.67**	**12.68**	**.000**
JP3	**.54**	**10.13**	**.000**
JP5R	**.61**	**11.44**	**.000**
JP7R	**.74**	**Fixed**	**Fixed**
Professional self-acceptance (.77)*			
PSA2	**.69**	**12.90**	**.000**
PSA4R	**.58**	**10.62**	**.000**
PSA7R	**.73**	**13.07**	**.000**
PSA8	**.69**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

Table 8 Correlations between Factors in the Second Revised CFA Model

Relationship	R	t-value	Sig.
Job autonomy and:			
Environmental mastery	**.73**	**7.18**	**.000**
Job growth	**.60**	**6.42**	**.000**
Positive organizational relationships	**.75**	**7.10**	**.000**
Job purpose	**.59**	**6.51**	**.000**
Professional self-acceptance	**.62**	**6.62**	**.000**
Environmental mastery and:			
Job growth	**.77**	**8.37**	**.000**
Positive organizational relationships	**.80**	**8.49**	**.000**
Job purpose	**.79**	**8.81**	**.000**
Professional self-acceptance	**.92**	**9.28**	**.000**
Job growth and:			
Positive organizational relationships	**.69**	**7.71**	**.000**
Job purpose	**.93**	**9.35**	**.000**
Professional self-acceptance	**.82**	**8.18**	**.000**
Positive organizational relationships and:			
Job purpose	**.78**	**8.58**	**.000**
Professional self-acceptance	**.76**	**8.18**	**.000**
Job purpose and professional self-accept	**.80**	**8.79**	**.000**

Figure 5 Second Revised First-Order CFA



Hypothesis 2: Occupational Well-being as a Higher Order Factor

It was hypothesized that the six four item factors assessed by the scale would load onto a higher order factor, occupational well-being. A second-order confirmatory factor analysis (CFA) was conducted on Sample 1 to determine whether the six factors would load onto occupational well-being. Thereafter, the second-order model was cross-validated using Sample 2.

Sample 1

The second revised first-order CFA model specified above was tested (see Figure 7). The model adequately fit the data: $\chi 2 = 799.36$, $p = .00$ (CFI = .84, PGFI = .69, and RMSEA = .07). While the chi-square was statistically significant, it is affected by the large sample size. While the absolute and comparative fit indices fell short of the acceptable .90 value (see Table 9), they were very close to the suggested value. However, some other fit indices suggested an adequate fit. The parsimony-adjusted measure was above the acceptable .50 limit. In addition, the RMSEA value was below the acceptable cut-off value (Schumacker & Lomax, 2004). The Relative Chi-square was considered acceptable (3.10). Consistent with the previous results of the current study, all indicator variables loaded significantly onto their hypothesized latent constructs (see Table 10). In addition, all first-order factors loaded significantly onto the second-order factor, occupational well-being (see Table 11).

Table 9 Goodness of Fit Indices for Second-Order CFA Model (Sample 1)

	Value
Chi-square	
Value	**799.36**
df	**246.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.84**
AGFI	**.80**
Parsimony-adjusted measure	
PGFI	**.69**
Comparative fit indices	
CFI	**.84**
IFI	**.84**
RMSEA	**.07**

Table 10 Factor Loadings for the Second-Order CFA Model (Sample 1)

Path	Beta	t-value	Sig.
Autonomy (.70)*			
A3R	**.61**	**8.57**	**.000**
A4R	**.55**	**8.00**	**.000**
A7R	**.68**	**9.14**	**.000**
A8R	**.57**	**Fixed**	**Fixed**
Environmental mastery (.70)*			
EM3	**.43**	**7.93**	**.000**
EM5R	**.70**	**12.85**	**.000**
EM8	**.56**	**10.34**	**.000**
EM9R	**.73**	**Fixed**	**Fixed**
Job growth (.66)*			
JG2	**.68**	**11.46**	**000**
JG3R	**.62**	**10.55**	**.000**
JG6R	**.44**	**7.80**	**.000**
JG8	**.68**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

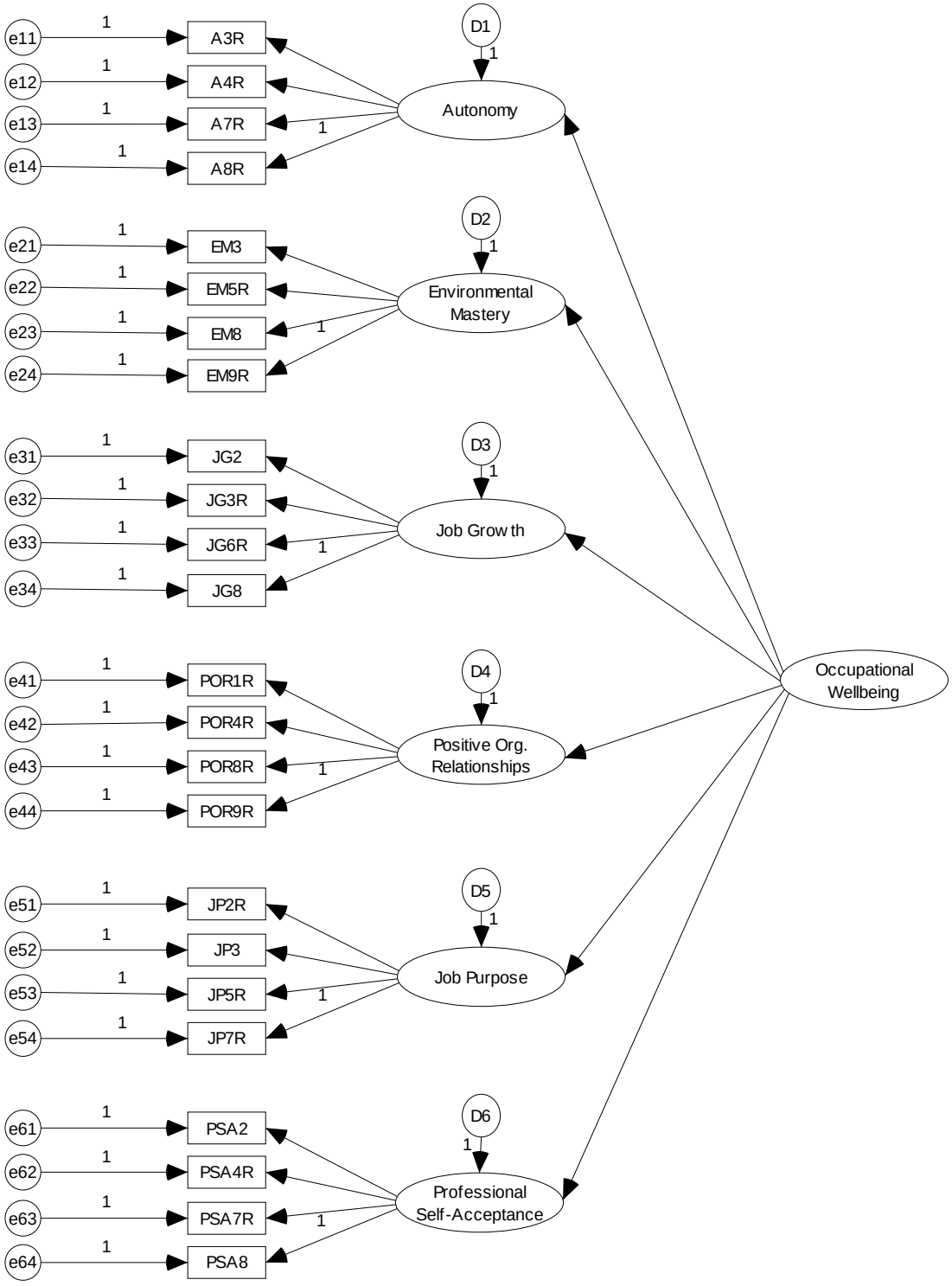
Path	Beta	t-value	Sig.
Positive org. relationships (.73)*			
PO1R	**.58**	**10.04**	**.000**
POR4R	**.58**	**10.08**	**.000**
POR8R	**.69**	**11.65**	**.000**
POR9R	**.70**	**Fixed**	**Fixed**
Job purpose (.73)*			
JP2R	**.67**	**12.51**	**.000**
JP3	**.52**	**9.64**	**.000**
JP5R	**.62**	**11.48**	**.000**
JP7R	**.75**	**Fixed**	**Fixed**
Professional self-acceptance (.77)*			
PSA2	**.70**	**12.34**	**.000**
PSA4R	**.60**	**10.64**	**.000**
PSA7R	**.75**	**13.05**	**.000**
PSA8	**.68**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

Table 11 Path Coefficients between Second-Order Factor and Dimensions (Sample 1)

Path	Beta	t-value	Sig.
Occupational well-being to:			
Autonomy	**.73**	**8.08**	**.000**
Environmental mastery	**.93**	**11.09**	**.000**
Job growth	**.89**	**Fixed**	**Fixed**
Positive organizational relationships	**.85**	**10.22**	**.000**
Job purpose	**.90**	**11.18**	**.000**
Professional self-acceptance	**.92**	**10.64**	**.000**

Figure 6 Best Fitting Second-Order CFA Model



Sample 2

The results were consistent with those found using Sample 1. Some indices indicated that the model was an adequate fit to the data: $\chi 2 = 993.27$, $p = .00$ (CFI = .80, PGFI = .68, and RMSEA = .08). The Chi-square value was still considered statistically significant; it increased in comparison to sample one. However, this should be expected as the fit of the scale was optimized for first sample. The absolute and comparative fit indices were still below the acceptable .90 value (see Table 12). However, the parsimony-adjusted measure was still above what is considered acceptable. Similarly, the RMSEA value was below the acceptable mark (Schumacker & Lomax, 2004). Finally, the Relative Chi-square of 4.04 was within the desired range of three to five. As shown in Table 13, all items had significant loadings onto their hypothesized latent variables. The six first-order factors loaded significantly onto occupational well-being (see Table 14).

Summary of Structural Fit

The nine item subscales did not produce a model that was testable; revisions produced models that were then evaluated. While some indices supported the fit to the six to eight item subscales, the best fitting first order model was the one with the four item subscales; subsequently, these items were used to assess the fit of the second order model. A comparison of the results from the first and second order models were less clear. The fit indices (REMSA, GFI, and AGFI) were similar for both models in the first sample; however, while the second order model produced more degrees of freedom, the chi-square was somewhat larger. Although the CFI and IFI were better for the first order model, the PGFI suggested the second order solution was a better fit. The two models were very comparable. Newsom (2006) suggests interpreting the REMSA in light of the PGFI, which is somewhat larger for the second order model. In

addition, some fit indices suggest that the second order approach fit the data when the results were cross validated. A case could be made that the second order factorial model is slightly more appropriate; this model was used in order to investigate the other hypotheses.

Table 12 Goodness of Fit Indices for Second-Order CFA Model (Sample 2)

	Value
Chi-square	
Value	**993.27**
df	**246.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.83**
AGFI	**.79**
Parsimony-adjusted measure	
PGFI	**.68**
Comparative fit indices	
CFI	**.80**
IFI	**.80**
RMSEA	**.08**

Table 13 Factor Loadings for the Second-Order CFA Model (Sample 2)

Path	Beta	t-value	Sig.
Autonomy (.71)*			
A3R	**.61**	**9.22**	**.000**
A4R	**.60**	**9.10**	**.000**
A7R	**.61**	**9.20**	**.000**
A8R	**.64**	**Fixed**	**Fixed**
Environmental mastery (.63)*			
EM3	**.39**	**7.08**	**.000**
EM5R	**.73**	**11.84**	**.000**
EM8	**.47**	**8.44**	**.000**
EM9R	**.64**	**Fixed**	**Fixed**
Job growth (.63)*			
JG2	**.66**	**9.52**	**000**
JG3R	**.67**	**9.63**	**.000**
JG6R	**.34**	**5.86**	**.000**
JG8	**.57**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

Path	Beta	t-value	Sig.
Positive org. relationships (.76)*			
PO1R	**.60**	**10.86**	**.000**
POR4R	**.61**	**10.95**	**.000**
POR8R	**.79**	**13.20**	**.000**
POR9R	**.68**	**Fixed**	**Fixed**
Job purpose (.72)*			
JP2R	**.61**	**11.90**	**.000**
JP3	**.52**	**10.11**	**.000**
JP5R	**.64**	**12.50**	**.000**
JP7R	**.74**	**Fixed**	**Fixed**
Professional self-acceptance (.78)*			
PSA2	**.72**	**12.79**	**.000**
PSA4R	**.64**	**11.64**	**.000**
PSA7R	**.75**	**13.26**	**.000**
PSA8	**.65**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

Table 14 Path Coefficients between Second-Order Factor and Dimensions (Sample 2)

Path	Beta	t-value	Sig.
Occupational well-being to:			
Autonomy	**.50**	**6.36**	**.000**
Environmental mastery	**.89**	**8.45**	**.000**
Job growth	**.78**	**Fixed**	**Fixed**
Positive organizational relationships	**.75**	**8.22**	**.000**
Job purpose	**.92**	**9.21**	**.000**
Professional self-acceptance	**.95**	**8.80**	**.000**

Hypothesis 3: Job Satisfaction Mediates the Relationship Between Climate and OWB

It was hypothesized that overall psychological climate would influence job satisfaction; job satisfaction would then effect overall occupational well-being. To assess this hypothesis, two structural models were tested. The first structural model assessed the effect of the latent constructs (and their respective indicator variables) on each other. The second structural model looked at the effects of the composite variables on each other.

Second-order CFA for Psychological Climate

Before examining the fit of the structural model, the fit of the psychological climate measurement model was assessed. The first-order CFA model fit the data adequately: $\chi 2$ = 663.63, p = .00 (CFI = .89, PGFI = .66, and RMSEA = .08); however, modification indices indicated that the model could be improved. Based on these, the fit of several second-order CFA models was then assessed. The best-fitting second-order CFA model is depicted in Figure 8. This model fit the data well: $\chi 2$ = 410.82, p = .00 (CFI = .92, PGFI = .67, and RMSEA = .08). Although the Chi-square value was still statistically significant, the Relative Chi-square was acceptable at 3.60. In addition, other indices suggested an adequate fit. The RMSEA was below the acceptable cut-off and the comparative fit index values were above .90 (see Table 15). Similarly, the parsimony-adjusted PGFI value was above .50. As a result, it could be said that the data fit the model well. Table 16 shows that all items loaded significantly onto their respective latent constructs. The path coefficients from the first-order factors to the second-order factors were all statistically significant (see Table 17). As a result, this model was used for the additional analyses.

Table 15 Goodness of Fit Indices for Second-Order CFA Model for Psychological Climate

Statistic/Index	Value
Chi-square	
Value	**410.82**
df	**114.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.90**
AGFI	**.86**
Parsimony-adjusted measure	
PGFI	**.67**
Comparative fit indices	
CFI	**.92**
IFI	**.92**
RMSEA	**.08**

Table 16 Factor Loadings for the Second-Order CFA Model of Psychological Climate

Path	Beta	t-value	Sig.
Self-expression (.73)*			
SE1	**.49**	**9.66**	**.000**
SE2	**.78**	**14.99**	**.000**
SE4	**.80**	**Fixed**	**Fixed**
Supportive management (.87)*			
SM1	**.78**	**17.71**	**.000**
SM2	**.81**	**18.68**	**.000**
SM3	**.79**	**17.98**	**.000**
SM5	**.80**	**Fixed**	**Fixed**
Role clarity (.77)*			
RC2	**.69**	**13.00**	**.000**
RC3	**.91**	**Fixed**	**Fixed**
Contribution (.80)*			
C1	**.75**	**14.67**	**.000**
C2	**.68**	**13.38**	**.000**
C3	**.72**	**13.99**	**.000**
C4	**.74**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

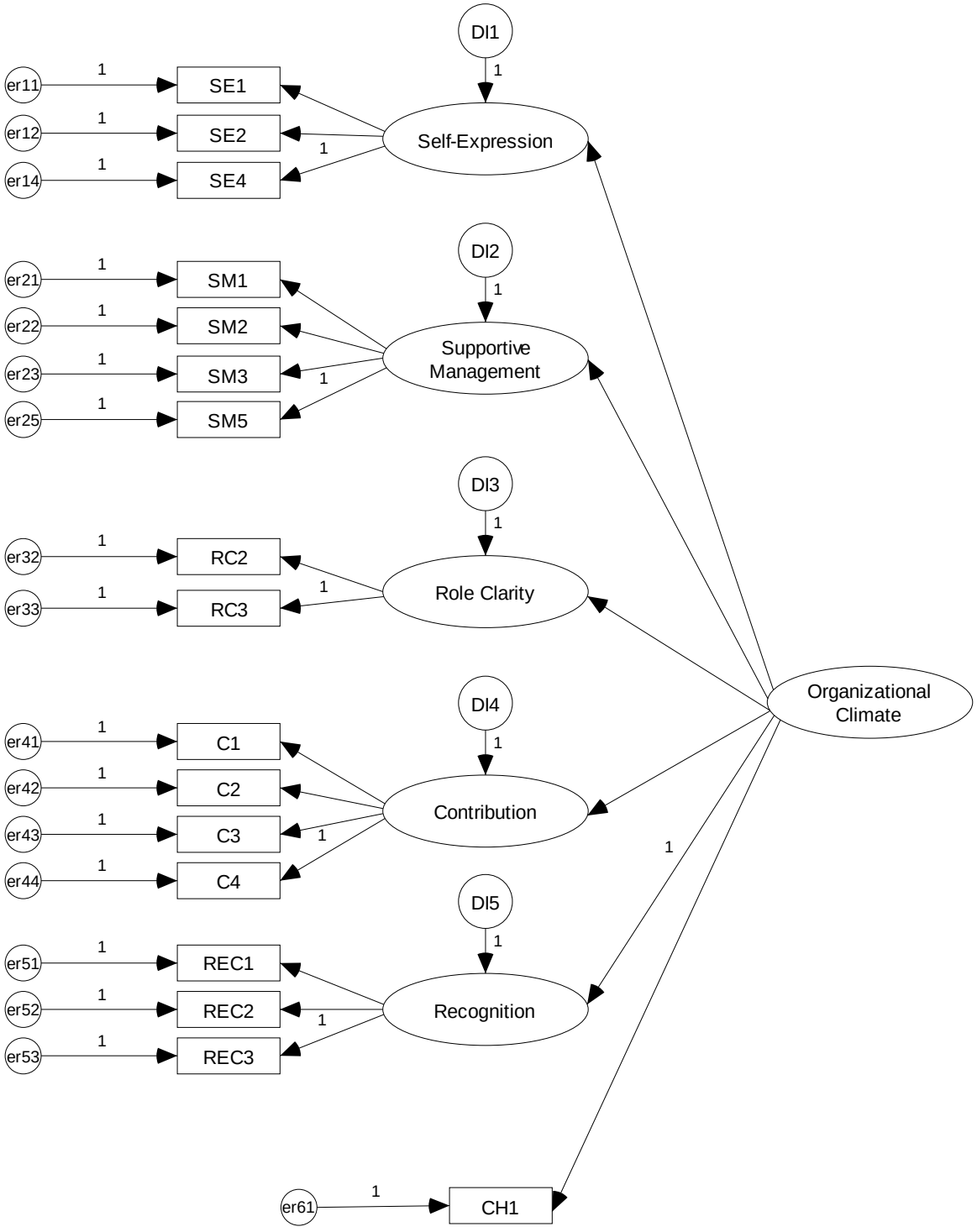
Path	Beta	t-value	Sig.
Recognition (.77)*			
REC1	**.58**	**12.21**	**.000**
REC2	**.80**	**17.39**	**.000**
REC3	**.79**	**Fixed**	**Fixed**

**** Internal coefficient alpha for subscale in parenthesis***

Table 17 Path Coefficients between Second-Order Factor and Climate Dimensions

Path	Beta	t-value	Sig.
Psychological climate to:			
Supportive management	**.90**	**14.71**	**.000**
Role clarity	**.74**	**13.72**	**.000**
Contribution	**.81**	**12.61**	**.000**
Recognition	**.94**	**Fixed**	**Fixed**
Self-expression	**.79**	**12.97**	**.000**

Figure 7 Best Fitting Second-Order CFA Model for Psychological Climate



Structural Model with Latent Constructs

The model depicted in Figure 9, assessing the relationship between psychological climate, job satisfaction, and occupational well-being, did not fit the data well: $\chi 2 = 6316.90$, $p = .00$ (CFI = .44, PGFI = .38, and RMSEA = .12). The Chi-square value was very large and statistically significant; the Relative Chi-square was over five, at 7.06, suggesting a poor fit. In addition, as the findings in Table 18 indicate, the comparative and absolute fit index values were below the acceptable criterion of .90; the parsimony-adjusted index was below .60. Finally, the RMSEA was above the acceptable .10 cut-off. In fact, none of the indices indicated that the model fit the data well.

However, all the items loaded significantly onto their respective constructs. Further, the path coefficients from the first-order factors to the second-order factors were all statistically significant (see Table 19).

Figure 8 Structural Model with Latent Constructs

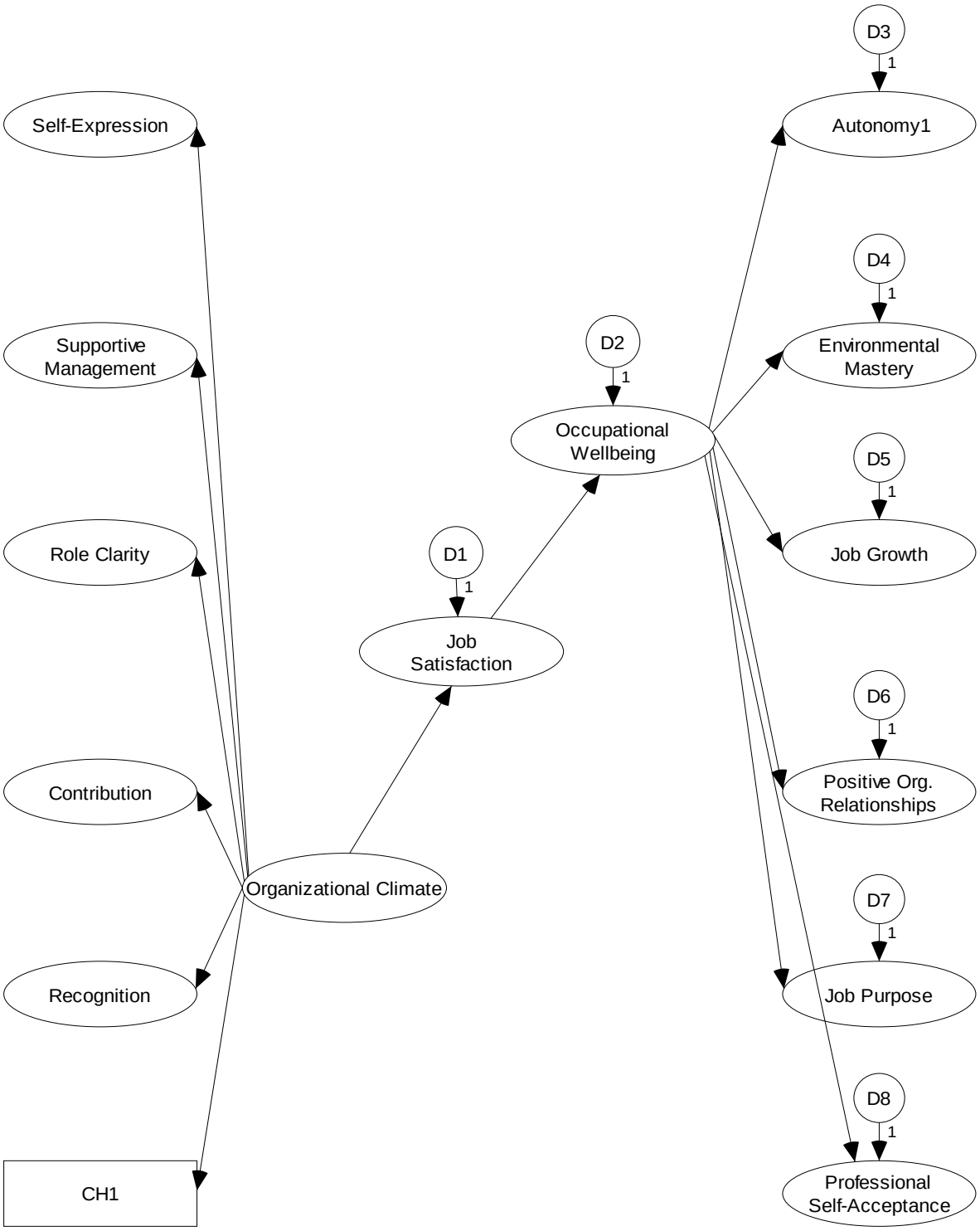


Table 18 Goodness of Fit Indices for Structural Model with Latent Constructs

Statistic/Index	Value
Chi-square	
Value	**6316.90**
df	**895.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.42**
AGFI	**.35**
Parsimony-adjusted measure	
PGFI	**.38**
Comparative fit indices	
CFI	**.44**
IFI	**.44**
RMSEA	**.12**

Table 19 Coefficients between Hypothesized Paths for the Structural Model with Latent Constructs

Path	Beta	t-value	Sig.
Psychological climate to job satisfaction	**.42**	**4.80**	**.000**
Job satisfaction to occupational well-being	**.75**	**10.47**	**.000**

Structural Model with Composite Variables

The model depicted in Figure 10 fit the data adequately according to some indicators: $\chi 2 = 51.03$, $p = .00$ (CFI = .92, PGFI = .16, and RMSEA = .33). Consistent with the previous model, the Chi-square value was statistically significant; however, it was substantially reduced. Because of the singular degree of freedom, the Relative Chi-Square is 51.03 and not acceptable. However, the comparative fit indices and one absolute fit index value were above the acceptable criterion of .90; this supports the mediated model. The parsimony-adjusted index was well below .50 (see Table 20) and the RMSEA was much greater than what is considered acceptable (Hu & Bentler, 1999). The regression coefficients of the hypothesized paths were all statistically significant (see Table 21).

Figure 9 Structural Model with Composite Variables

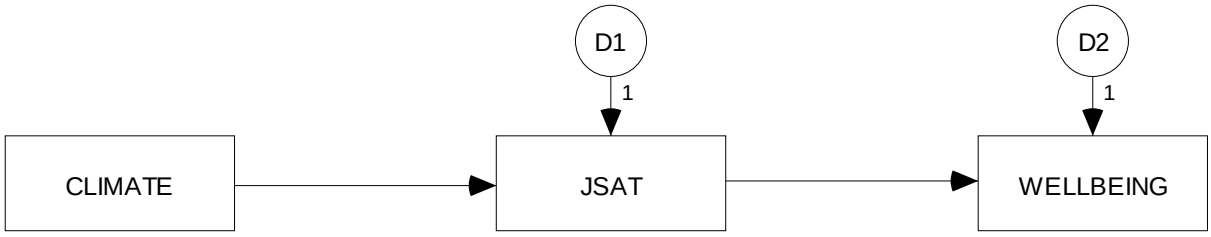


Table 20 Goodness of Fit Indices for Structural Model with Composite Variables

	Value
Chi-square	
Value	**51.03**
df	**1.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.93**
AGFI	**.60**
Parsimony-adjusted measure	
PGFI	**.16**
Comparative fit indices	
CFI	**.92**
IFI	**.92**
RMSEA	**.33**

Table 21 Coefficients between Hypothesized Paths for the Structural Model with Composite Variables

Path	Beta	t-value	Sig.
Psychological climate to job satisfaction	**.78**	**26.55**	**.000**
Job satisfaction to occupational well-being	**.56**	**14.24**	**.000**

These findings indicate partial support for the third hypothesis. When composite variables were examined, overall psychological climate did significantly affect job satisfaction. Job satisfaction, in turn, did have a significant effect on occupational well-being.

Hypothesis 4: Tests of Specific Paths

It was hypothesized that each dimension of psychological climate would have a direct effect on specific dimensions of occupational well-being. To assess this set of hypotheses, the structural model depicted in Figure 11 was evaluated. Some indices indicated that the model did not fit the data well: $\chi 2 = 4073.32$, $p = .00$ (CFI = .61, PGFI = .57, and RMSEA = .10). The Chi-square value was large as well as statistically significant; the Relative Chi-square was slightly over what was considered acceptable as it was 5.28. As the findings in Table 22 show, the comparative and absolute fit indices were below the acceptable threshold. However, the RMSEA was at the acceptable mark. In addition, the parsimony-adjusted fit indices were above .50, indicating support for the model. Finally, all indicator variables loaded significantly onto their respective constructs. The findings in Table 23 indicate, however, that not all hypothesized paths had statistically significant regression coefficients.

Figure 10 Structural Model Assessing Effects of Psychological Climate on Occupational Well-being

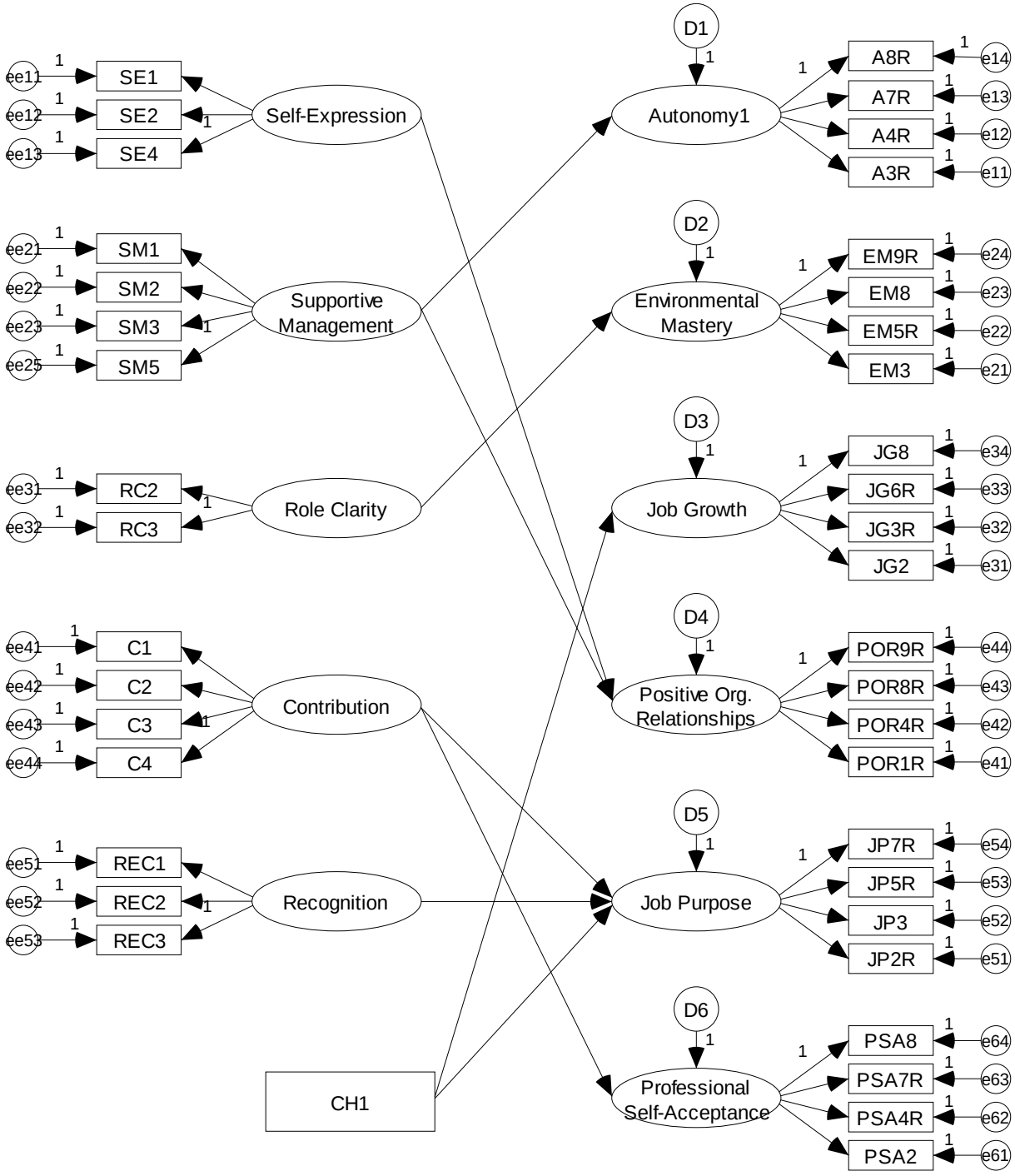


Table 22 Goodness of Fit Indices for Structural Model Assessing Effects of Psychological Climate on Occupational Well-being

Statistic/Index	Value
Chi-square	
Value	**4073.32**
df	**771.00**
Probability level	**.00**
Absolute fit indices	
GFI	**.64**
AGFI	**.59**
Parsimony-adjusted measure	
PGFI	**.57**
Comparative fit indices	
CFI	**.61**
IFI	**.61**
RMSEA	**.10**

Table 23 Coefficients between Hypothesized Paths for the Structural Model Assessing Effects of Psychological Climate on Occupational Well-being

Path	Beta	t-value	Sig.
Self-exp to positive org. relationships	**.23**	**4.00**	**.000**
Supportive mgt to positive org. relations	**.45**	**7.56**	**.000**
Supportive management to job autonomy	**.09**	**1.50**	**.130**
Role clarity to environmental mastery	**.53**	**6.73**	**.000**
Contribution to professional self-accept.	**.77**	**11.32**	**.000**
Contribution to job purpose	**.73**	**9.91**	**.000**
Recognition to job purpose	**.10**	**1.90**	**.060**
Challenge to job purpose	**.13**	**2.75**	**.010**
Challenge to job growth	**.56**	**8.79**	**.000**

Table 23 indicates that Hypotheses 4a and 4b were supported. Self-expression and supportive management did have direct affects on positive organizational relationships. Hypothesis 4c, however, was not supported by the data; supportive management did not significantly influence job autonomy. Hypothesis 4d was supported, as role clarity had a significant positive affect on environmental mastery. Similarly, Hypotheses 4e and 4f were supported. Contribution had direct affects on both professional self-acceptance and job purpose. Hypothesis 4g, however, was not supported by the data. Recognition did not have a statistically significant effect on job purpose. Hypotheses 4h and 4i were supported by the data; challenge did significantly and positively affect job purpose and job growth.

CHAPTER 4 - Discussion

The problems associated with the current methods of conceptualizing occupational well-being indicate that there is a need to better refine and operationalize the construct. Danna and Griffin (1999) explain that there is a need to "further develop, refine, and define the core constructs of health and well-being in the workplace" (p. 380). The current study's theory-based operationalization of occupational well-being addresses this need. This theory of occupational well-being provides researchers with a common taxonomy and language to use to discuss and define well-being. This study better articulates occupational well-being, a stark contrast to the current vaguely defined construct. Dana and Griffin (1999) emphasize that there is "clear priority for future work in this area" to continue to "refine and specify frameworks" with the "evolutionary goal of eventually creating a rigorous model or theory of health and well-being in the workplace" (p. 379). This study drew upon the existing literature to better define occupational well-being and examine the construct in the context of the organization.

In addition to correctly specifying occupational well-being, other researchers indicate that there is a need for ways to assess the construct. Keyes and Lopez (2002) explain it is necessary to create "valid and reliable instruments" in order to measure occupational well-being. Adkins (1999) also states that researchers must be able to "measure, quantify, and describe" occupational well-being. In order to address these needs, the current study developed and validated a new scale to assess well-being at work. This allows researchers and practitioners to measure and evaluate the occupational well-being of employees.

Overall, the results of this study were consistent with the extant literature on general psychological well-being. First, the factorial structure of the scale was better aligned with the proposed theory of occupational well-being when the subscales were shorter than when they were longer (with nine items or six to eight items). While the fit of the scale improved as the length of the subscales were reduced, the correlations between the factors were stronger when there were fewer items. In addition, the subscales with four items had somewhat lower reliabilities than their longer counterparts. Finally, while there is some indication that the factors load onto occupational well-being, not all of the fit indices reached optimal levels. As a result, future researchers might consider exploring additional modifications to the scale in order to improve its structure and reliability so that the resulting second-order model is a better fit.

Internal Consistency

In general psychological well-being research, estimations of internal consistency suggest that longer versions of the scales are more psychometrically sound. The current study found that as the subscale length decreased to four items, the internal consistency also declined slightly. Consistently, research suggests that longer versions of the scales offer the only means to acceptable levels of reliability. For example, Ryff (1989b) demonstrated higher reliabilities using the 32 item subscales (alpha = .86 to .93) than Van Dierndonck's (2005) research which used the six to eight item subscales (alpha = .72 to .81). However, in the present study, in some cases the six to eight item scales were more internally sound that the nine item subscales. For example, the coefficient alpha improved for the dimension autonomy when three items were removed from the subscale; it improved from .66 to .71. This indicates that several of the items were not related to the others, as evidenced by lower corrected item total correlations and high values for alpha if item deleted. In addition, the highest observed reliabilities for the scales were

very similar. Positive organizational relationships was the most internally consistent of the nine item subscales (alpha = .83), while professional self-acceptance demonstrated the best internal consistency for the six to eight item subscales (alpha = .82). It is important to note the levels observed using the six to eight item subscales are similar to those found by Van Dierndonck (2005). There is a substantial difference in the 32 item subscales versus the six to eight versions. Moving from nine item subscales to six to eight is more of a refinement. In light of the present findings, it could be said that removing a few items from the subscales didn't negatively affect the observed reliabilities.

However, research using the briefest versions of the scale (three and four item subscales) has been plagued with internal consistency issues. In this study, while the coefficient alphas decreased as the number of items was reduced to four, the internal consistency was slightly higher than previous research might suggest. They ranged from .66 (job growth) to .77 (professional self-acceptance). In addition, autonomy was only reduced from .71 to .70. This suggests that while these levels are not considered ideal, the internal consistency was not compromised as much as it could have been. Ryff and Keyes (1995) used the three item subscales and found reliabilities ranging from .33 to .56. Cheng and Chan (2005) also utilized a four item approach and demonstrated alphas ranging from .55 to .70. As a result, it could be considered that the items used in the four item occupational well-being scale were more internally sound than those used in shortened versions of the psychological well-being scales.

Structure of Well-being

The factorial structure of the scale was examined as the structure of the psychological well-being scale has been widely questioned. Although there was theoretical reasoning to suggest a six factor solution, an exploratory factor analysis was first conducted to determine the

number of dimensions suggested by the scale without any constraints. When an exploratory factor analysis was run using the original nine item subscales used in this study, 12 factors emerged. Kafka and Kozma (2002) also found a higher number of factors were produced using an exploratory factor analysis approach on the scales of general psychological well-being; these researchers found 15 factors when they used the 20 item subscales. While this does not suggest that this factor structure is the only one to fit the data, it does lend evidence to the fact that the factors may not be as neatly defined as Ryff (1989a) would suggest. To determine if a six factor solution was plausible, a six factor solution was forced; the items did not correspond to the factors for which they were hypothesized to load. Kafka and Kozma (2002) found similar results in their research. However, because the occupational well-being scale was derived from theory, a confirmatory factor analysis was conducted to assess how well the questions corresponded to the theory. This made it possible to estimate the model and compare its fit with the observed data.

The results of these approaches were fairly consistent with previous research; the factorial structure of the scale varied depending on the length of the subscales. Initially, the first-order confirmatory factor analysis would not run as it was not positive definite. This indicates that variables or sets of variables are too highly correlated with one another for the model to run. In this study, some items were significantly correlated with nearly all items in the scale. While the large sample size makes it more likely that smaller correlations will be found significant, a number of the items were correlated .3 and .4 with most items in the scale. While other researchers have not indicated that this was a problem with the longer versions of the scales in research on general psychological well-being, nearly all researchers have found that there is high degrees of overlap between the factors (discussed below) which can influence the ability to run

the model. However, the previous research was conducted on general psychological well-being rather than occupational well-being. It is possible that the two theories function differently. Future researchers should assess the fit of longer versions of the occupational well-being scale.

Once items were removed from the scale that correlated significantly with many other items producing six to eight item subscales, the model was able to run. Some of the statistics (PGFI and REMSA) indicated that the model fit the data while others suggested that there were opportunities for improvement. Previous research on general psychological well-being has not found longer scales to produce satisfactory indicators of model fit. For example, Hillson (1997) administered the 14 item subscales on general psychological well-being to two different samples. It was determined that a six factor solution was not a good fit. In addition, Springer and Hauser (2002) failed to produce a factor structure aligning with Ryff's (1989b) theory using subscales more moderate in length.

The first-order model that best fit the data was the shortest version of the scale. The reduction in items dramatically reduced the size of the Chi-square. In addition, it improved the acceptability of the other indicators used to assess model fit; however, only the PGIF and REMSA were able to reach even the most lenient of standards. Van Dierendonck (2005) also examined multiple versions of the psychological well-being subscales. They administered 14 item subscales and evaluated this version as well as models containing three and nine item subscales. They found that the factorial validity was "acceptable" only for the shortest version of the scale. Likewise, Cheng and Chan (2005) also found that the six factor structure for their four item subscales were "only moderately fitting, using more liberal cutoffs" (p. 1312). Overall, the existing research on the scales of psychological well-being has yet to produce a study where the results suggest that a clean, six factor solution.

This in part may be due to the fact that the factors are not as distinct as Ryff (1989a) may have hoped. While some research has found smaller or more moderate correlations between the subscales, others have not. Clarke et al. (2001) found low correlations ranging between -.04 and .39 for the subscales. The largest correlation, of .39, was between Environmental Mastery and Self-Acceptance. Although it might be expected that the factors correlate somewhat as they are hypothesized to load onto psychological well-being, these correlations might indicate that the factors are distinct; there has been a great deal of debate in the general psychological well-being literature as to whether or not the factors are distinct. Although moderate correlations between the subscales do not necessarily indicate a problem, Springer and Hauser (2002) state strong correlations may suggest that the dimensions are highly related rather than distinct from one another.

The present study found correlations which indicated that there is an overlap between the variables. The dimensions of Job Purpose and Job Growth as well as Self-Acceptance and Environmental Mastery were the most strongly related for the six to eight ($r = .94$ and .93 respectively) and 4 item ($r = .93$ and .92 respectively) subscales. Springer and Hauser (2002) found that Self-acceptance and Environmental Mastery were highly correlated ($r = .97$); other research (Clarke et al., 2001; Kafka & Kozma, 2002) has also found these variables to be highly correlated. For example, Schmutte and Ryff (1997) found Self-Acceptance and Environmental Mastery to be highly related. While previous research has suggested that these factors are related, no researchers have mentioned strong correlations between Purpose in Life and Personal Growth. Again, it is important to remember that while previous research was conducted on psychological well-being in general, it is possible that people experience occupational well-being differently. When well-being is examined specifically about work, it is possible that individuals

interpret these experiences differently. Interestingly, it should be noted that both of the dimensions contain a number of future oriented items. For example, one of the Job Growth items is "I think it is important to have new experiences that challenge how I think about my job and the organization." Conversely, one of the Job Purpose items is "I set and actively work toward goals related to my job." To many, these items might be similar. Some might consider setting goals to relate to growth.

To address this problem, previous researchers have explored multiple approaches, including modifying the number of factors and allowing items to load onto a second factor. For example, Hillson (1997) demonstrated support for both three- and four-dimensional models. In one study, it was found that self-acceptance, environmental mastery, purpose in life, and autonomy subscales comprised one dimension. In a second sample, evidence supported a factor made of self-acceptance, purpose in life, and environmental mastery. These findings, coupled with the correlations observed in the present study, lent support to the idea that self-acceptance and environmental mastery might be a shared factor. Van Dierendonck (2005) found that in some cases, a five factor model joining these subscales fit the data just as well as a six factor solution. As a result, a five factor first order approach was run using the data in the present study. It was not found that this model fit the data any better than the six factor approach.

While Job Growth and Job Purpose were most strongly related in the present study, no attempts were made to combine the factors as they were not previously suggested to be strongly related. Although the correlations suggested that by the time that these subscales were shortened, they were very strongly related; the observed correlations were in the .9 range, suggesting overlap between the constructs. It is possible that as items were removed from the subscales, they were no longer capturing the breadth of the dimensions. As a result, the overlap

between the factors increased. Researchers (Ryff, 1989a) have strongly cautioned others from making modifications that are not based on theoretical reasoning; therefore these dimensions were not explored as potential ones to combine. Future research should investigate the relationship between these variables as well as the one between professional self-acceptance and environmental mastery. In addition, alternate approaches to the six factor model should also be explored. It is possible that a four dimensional solution is more appropriate for occupational well-being.

Other researchers agree that while the factor structure of psychological well-being might be six dimensional, it is not as straightforward as the theory claims. A great deal of research suggests that most items are not only related to the factor for which they are hypothesized to load, but other additional factors. For example, Clarke et al. (2001) found the best support for a modified six-factor solution using three-item subscales; they allowed four items to load onto their dimension and another. In addition, van Dierendonck (2005) found that for even the best fitting model, the modification indices suggested allowing each item to load onto an additional factor. Consistent with this previous research on psychological well-being, the modification indices for both versions of models that ran suggested that many items also related to additional factors. However, experts (Ullman, 2001) have cautioned those using structural equation modeling from making modifications that do not make theoretical sense. It was observed that the indices suggested allowing items to covary that did not necessarily make theoretical sense. For example, one of the largest modification indices indicated that an item from Job Autonomy should be allowed to relate to Professional Self-acceptance. However, when these items were examined, they didn't seem to be theoretically similar. Allowing these estimations is criticized by Springer and Hauser (2002). As a result, these estimations were not added to the model.

While they would have produced smaller Chi-square values, adding these relationships would have compromised the scale theoretically.

Conservative approaches with regard to modifications are supported by Ryff and Keyes (1995); they caution researchers against making decisions based solely on data. While data in their study suggested a five-factor approach more involved research suggested otherwise. They found different age profiles for variables that had been suggested by a factor analysis to be combined. It is also possible that age plays a role in occupational well-being. As we grow older, we may become less concerned with career opportunities; instead, our relationships may become more important. Unfortunately, the sample used for this study was predominately younger and not necessarily reflective of the general work population. As a result, it was not possible to research the age profiling of the subscales. Future research should aim to assess how age affects the response patterns of the occupational well-being subscales. If response patterns are not distinctly different, this might provide evidence that dimensions can be combined satisfactorily. However, if there are differences in age profiles, combining factors should be examined more closely.

Fit of Second Order Model

After the first order model was evaluated, the fit of a second order model was assessed. Other researchers have also attempted to determine whether or not a second order model is appropriate. Some research (Van Dierendonck, 2005; Ryff & Keyes, 1995) supports the fit of second order models. Consistent with these studies, the current research suggested some support for a hierarchical model. In the first sample, two of the fit indices reached acceptable levels; the other indices were close to the thresholds, suggesting that the six dimensions should be considered related to a higher order factor. Although some of the indices did not reach

acceptable levels, Ullman (2001) suggests that trends should be considered. The fit of the GFI, CFI, and IFI were all .84, which is very close to the optimal level of .90. As a result it could be considered that as the most of the indices indicate that the model is supported. Similarly, Van Dierendonck (2005) concluded that the three-item sub-scales of psychological well-being demonstrated a clear six-factor hierarchical solution. However, Cheng and Chan (2005) point out that the fit indices were lower than what is considered ideal for all but one of the fit indices. In addition, Ryff and Keyes (1995) found that the best fitting model was composed of six distinct factors loading onto a second, higher order factor. This model fit the data substantially better than other models, including a one factor model. Additionally, other research has failed to support such a model (Springer & Hauser, 2002).

It is also important to note that the fit of the second order model was also evaluated in the second sample. Murphy (1983) suggests that before scales are used, research should cross validate their properties; ideally, researchers use two independent samples. Consistent with Murphy's (1983) suggestions, two independent samples were used. Because the scales were revised based on information from the first sample they are considered optimized for sample one. However, to ensure that the results are not sample specific, one must assess the fit in another independent sample. As the scale items were refined based on the first sample, it was expected that they would not fit as well in the second sample. As expected, the results from the second sample didn't fit as well as the first sample. While the Chi-square increased, the RMSEA and PGFI indicated support for the second order model. Although the GFI, CFI, and IFI decreased somewhat, they didn't drop as dramatically as might be expected. As a result, the fit of the second order model was also supported in the second sample.

Comparison of First and Second Order CFAs

The first model which included nine item subscales failed to run. However, revised versions of the scale produced solutions. It is clear that the four item subscales fit the first order model better than the six to eight item subscales did. As a result, the four item subscales were used to evaluate the fit of the second order model. Many researchers (Cheng and Chan, 2005; Van Dierendonck, 2005) also favor the use of the shortened scales.

There is support for both a second order and first order model in the psychological well-being literature. Springer and Hauser (2002) assessed both types of models on the scales of psychological well-being and found that the data supported the first order model. The second order approach fit the data substantially worse than the first order model. In addition, Cheng and Chan (2005) also concluded this using the four item subscales; Clarke, Marshall, and Wheaton (2001) found that while there was support for six distinct factors, they were not related to the same higher order construct. However, some previous research supports Ryff's (1989b) theory of Psychological Well-Being, finding six clear factors that all load onto a higher order well-being factor. Van Dierendonck (2005) also found support for the second order model.

Despite the divide in the literature, the differences between the first and second order confirmatory factor analyses in this study were more difficult to interpret. The fit indices were similar for both models in the first sample. The REMSAs, GFI, and AGFI were all very similar. The Chi-square was somewhat larger for the second order model, though it produced more degrees of freedom. However, the CFI and IFI were slightly better for the first order model, while the PGFI was somewhat larger for the second order solution. As a result, it could be considered that the solutions were very comparable. However, Newsom (2006) suggests interpreting the REMSA in light of the PGFI, which is somewhat larger for the second order model. In addition, it is encouraging that while the fit was somewhat worse in the second

sample, some fit indices suggest that the second order approach fits the data. As a result, a case could be made that the second order factorial model is slightly more appropriate. Because of this, this model was used in order to investigate the subsequent hypotheses.

Fit of Contextual Models

The present study attempted to address the criticism that the majority of occupational well-being research is conducted without regard to the organizational context. As a result, it was proposed that psychological climate influenced an individual's job satisfaction; this in turn, affected their occupational well-being. Though there was some indication in the previous research that this might be the case, these studies did not empirically test these exact variables. For example, Petterson and Arnetz (1997) proposed a similar theoretical model; Carr et al. (2003) assessed some similar constructs and found results suggesting that these relationships might be observed in the present study. However, the present study is the first to evaluate these relationships. The results of the analyses suggest that our overall perceptions at work affect our levels of job satisfaction which influence our overall occupational well-being. This model fit the data better than a direct relationship between psychological climate and occupational well-being. It seems to makes sense that if we have negative interpretations of our work environment, we will be less satisfied at work. Research indicates a strong relationship between how we experience our relationship with our supervisor and overall job satisfaction. If individuals feel like they are not supported by their leader or not provided with enough control over their environment, they are less satisfied with their jobs. These lingering dissatisfactions lead to an overall poor well-being at work.

However, this relationship was only observed when composite variables were used (as hypothesized by the study). When the structural model with latent variables was evaluated, no

fit indices indicated an acceptable fit to the data. This further supported the hypotheses of the study. If this model were supported, then the fit of the direct relationships between the factors of psychological climate and occupational well-being would be contradictory. However, some fit indices suggested that the model with these direct relationships is supported. This indicates that while our overall experience of occupational well-being is influenced by a job satisfaction which is in turn influenced by psychological climate, our more specific experiences are directly influenced. For example, the role clarity we experience at work directly influences the degree to which we feel we can control out environment. Brown and Leigh (1996) state that when we know what is expected of our role at work, we feel our environment is more predictable and controllable. In addition, when individuals are challenged at work, they have the potential to stretch their skill sets. However, if individuals continue to complete the same types of assignments, they are less likely to grow. It makes intuitive sense that job satisfaction would not mediate these types of relationships and that they would instead by directly influenced by how the work environment is experienced.

It is important to note that two of the direct relationships were not supported by the data. As the sample size in the study was quite large, all other beta weights were significant. The failure to support these two paths indicates that there is no relationship, no matter how small, between these dimensions. Supportive management failed to directly influence job autonomy. However, when the questions on the job autonomy dimension were examined, light was shed on these findings. The questions assessing job autonomy did not include items such as "I have control over the tasks I complete." Rather, the questions included items such as "I tend to worry about what other think of me." After the items were reviewed, it indicated that they potentially do not assess job autonomy as it is typically thought. Instead, they seem to assess confidence in

decisions or a construct along those lines. As a result, it is suggested that this dimension be further clarified before additional research is conducted. In addition, the relationship between recognition and job purpose was not supported by the data. While it was close to significant, the fact that it was not significant despite the large sample size suggests no path exists between the two variables. The results suggest that recognition is not enough to make a job seem purposeful. Praise for easy assignments or those that do not contribute to the greater goals of the organization does not make a job seem like it has a purpose. Instead, it seems that challenge and contribution are more important to making work purposeful and meaningful.

Limitations

Methodological Limitations

The first order-factor analyses as well as the reliability analyses suggest that the shortened version of the scale is more psychometrically desirable than longer versions that were explored. In addition, there are other advantages to using briefer versions of the scale. Springer and Hauser (2002) suggest that the longest versions of the scales are not necessarily practical. In a world of multiple distractions, participants can experience survey fatigue. This was observed in the present study. While SurveyResponse indicated that approximately 800 people entered each webpage, there were only 401 and 452 individuals that took the time to complete the survey. Had the longest versions of the scales been used, it is possible that the completion rate would have been even more affected. In addition, when researchers reviewed the scales, they commented that the scales were very long and cautioned that the participant completion rate might be very low.

Although it had been planned to base the occupational well-being items on Ryff's (1989a) 14 item subscales, it was determined that the gains in domain sampling would be

compromised by response rate. As a result, it was decided to use the nine item subscales. Cheng and Chan (2005) also began with these versions, reasoning that the best items had been retained by the shorter version of the scale; they suggested it would be redundant to administer longer versions of the scale given the existing evidence. As occupational well-being is distinct from general well-being, future research should consider exploring administering longer versions of the scale to determine if the best items to use in order to assess the construct. The goal of this study was to assess the construct in regards to the context of the organization; this might have been a bit of a lofty goal in order to also consider identifying the best of the 32 item subscales.

Another limitation of the study is that all variables are collected using one method, self-report. Thorndike (2005) states that Campbell and Fiske (1959) suggest that researchers collect data using several methods to establish the construct validity of a scale. This allows researchers to compare different types of relationships. Researchers can make comparisons based on data on the same trait collected in different manners (observation and self report for example), different aspects that use the same method of data collection (in this case, a survey to assess Environmental Mastery and Positive Organizational Relationships), or the same trait assessed using different methods (a self rating of Positive Organizational Relationships and an observation). This type of approach is ideal when assessing the convergent validity of a measure. Hopefully, different methods of measuring the same trait will yield high correlations, indicating that they measure the construct similarly. Hinkin (1998) points out that using multiple methods to collect the data "ameliorates the common source/common method concerns raised when collecting data from a single source." One problem associated with using one type of data collection method is the potential for monomethod bias. When the same method of data collection is used, there is the potential for inflated correlations. As a result, relationships

observed here might be artificially higher than those that might be observed using several methods of data collection. Future researchers should replicate this study using multiple methods of assessing the same aspects of occupational health. Quick et al. (2003) state that researchers are becoming more inclined to use multiple methods to assess health and well-being, indicating that multiple method validation of the occupational well-being scale is a strong possibility.

One concern most cited in psychological literature is that too much research is conducted using college students (Reips, 2000). Considering that the current study examined work related variables, the use of a student sample was considered inappropriate. Few students work full-time, making it difficult to attain an acceptable sample size so that occupational well-being could be assessed. However, an internet research tool, StudyResponse, specializes in reaching large samples of individuals. This tool was developed to address the problem of reaching non-students in a systematic way. This organization has created a network of individuals interested in study research. Potential participants register with the organization. When researchers are interested in a population, they specify the groups they are interested in reaching. StudyResponse then randomly samples from these populations and sends out survey invitations. As a result, it is possible to survey large samples of individuals in a controlled manner. Stanton and Weiss (2002) state that in addition to reaching a large sample of employed individuals using the internet and StudyResponse to collect data has a number of potential advantages. For example, participants are assured anonymity and are also able to withdraw from the experiment easily without the social pressure of the typical experiment.

However, Stanton and Weiss (2002) also state that the internet has the potential to have some downsides when used to collect data. The experimenter looses control over who

participates in the study as the link can be easily forwarded. In this study, this was addressed as individuals had to fill in an identifier used by StudyResponse. Those without this identifier were not included in the analyses. In addition, no individuals participated more than once. Those with access to the internet reflect a specific population that may differ from the general population. Stanton and Weiss (2002) point out that samples ascertained by StudyResponse generally have more females than males; the results of this study are consistent with their research. Slonim and Garbino (2005) suggest that individuals who participate in internet studies are often better educated and more technology oriented. While data was not collected on these variables, it is important to remember this when the results are interpreted. Finally, internet research is criticized because it is difficult to generate a response rate as it is hard to determine how many individuals had the opportunity to participate in the experiment. However, the use of StudyResponse as a participant selection vehicle addressed this concern. StudyResponse forwarded the link to a specific number of individuals; they were also able to determine how many individuals clicked on the link. As a result, it was possible to determine the response rate for the current study. Overall, the consensus is that while research using StudyResponse and the internet has some potential pitfalls, these can be managed in an effort to reach large samples of non-students.

In addition, there are a few statistical limitations of this research. The preferred way for determining what paths to delete when structural equation modeling is used is the Wald Test. This statistic identifies which paths can be deleted by indicating how much the chi-square will be reduced if the path is removed. Unfortunately, Ullman (2001) indicates that AMOS does not produce this statistic. While this could have been computed by hand for each path, the number of paths utilized by the study made it daunting. In an effort to address this concern, other

modification indices, factor loadings, and reliability analyses were used to identify potential paths for deletion. While the Wald test is one way to concretely identify these paths, the use of a variety of other methods produced converging results to highlight the paths that reduced model fit.

Another problematic issue is that while some indices indicate support for the models, there was never a model where all indices suggested the same conclusion. In previous research, suggesting models are acceptable when only some of the indices indicate support has been criticized. For example, Van Dierndonck (2005) criticized Cheng and Chan's (2005) study for this very reason. However, Ullman (2001) points out that this is often the case in structural equation modeling. It is up to the researcher to interpret conflicting indices. As a result, while some of the models are considered "acceptable" none are considered a "good fit" to the data. Additional research should be done using similar procedures to determine whether these trends do indeed support the proposed hypotheses.

Theoretical Limitations

It is important to note that the study tested a model of occupational well-being based on six dimensions. However, these dimensions might not capture all of the relevant aspects of occupational well-being. In a similar manner, Van Horn et al. (2004) were quick to point out that their results "may or may not cover all key aspects of occupational well-being." The theory's basis stems from Ryff's (1989b) work which addresses the shortcomings of other approaches and incorporates key findings from other multi-dimensional approaches to occupational well-being (Warr, 1987; van Horn et al., 2003). These efforts have hopefully uncovered the related aspects of occupational well-being. It is important to keep in mind that conclusions drawn from the research might be different if different dimensions or scales were

included in the theory. Researchers should not take the results of this study as conclusive evidence about the structure and composition of occupational well-being; rather, they should continue to refine and better conceptualize what is meant by occupational well-being.

One of the limitations associated with the development of the proposed scale is the state of current research on occupational well-being; much of the past research operationalizes occupational well-being by assessing job satisfaction and negative states (stress, strain, burnout etc.). While many researchers agree that the absence of these negative states or presence of job satisfaction does not constitute enhanced occupational well-being, there is not much research that examines the construct that does not use these approaches. As a result, many of the studies mentioned in the literature review to support the use of the proposed dimensions of occupational well-being are based on research using these approaches. While some might feel it is hypocritical to criticize approaches and then use their findings for support, the current study is also based heavily on the theory and model proposed by Ryff (1989b). As a result, the dimensions are based on her extensive review of other theories related to well-being. This, combined with support for the dimensions based on other approaches to occupational well-being, suggests that these dimensions are important to the construct. As a result, they were incorporated into the model.

Despite the extensive approach Ryff (1989a) took to developing the scales of psychological well-being and support in the existing occupational well-being literature, it is possible that this theory does not translate well to workplace well-being. For example, while some of the findings were aligned with the research on psychological well-being, others were different. In this study, job purpose and job growth were very highly related; however, this was not observed in the research on psychological well-being. In addition, a reevaluation of the job

autonomy variables suggests that the items do not really evaluate job autonomy. Given the state of occupational well-being, future research should consider a more thorough approach to theory development. It might be a good idea to interview individuals about their well-being experiences at work similar to Ryff's approach; future researchers might also scour the existing literature to align existing theories to propose a model specific to occupational well-being. It is possible that these approaches might yield different dimensions, in content and number, than those suggested by the occupational well-being scale translated from Ryff's work.

Conclusion

While the results suggest support for a hierarchal model of occupational well-being, the results must be interpreted in light of the research limitations. Although the findings indicate that well-being is a multi-dimensional construct, it is important that occupational well-being researchers work to identify the most important indicators of well-being rather than translate a pre-existing model. A structured approach using theme analyses and interviews might suggest a different model of occupational well-being. Upon the completion of such work, some of the items here could be used as a basis to help develop questions. In addition, researchers are encouraged to continue to use psychological climate to help create a context around occupational well-being.

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Appendix A - Well-being Items

Original Psychological Well-being Items	Proposed Occupational Well-being Scale
Autonomy	**Autonomy**
My decisions are not usually influenced by what everyone else is doing.	The decisions I make at work are not usually influenced by what everyone else is doing.
I have confidence in my opinions even if they are contrary to the general consensus.	I have confidence in my opinions even if they are contrary to those of my co-workers.
I tend to worry about what others think of me.	I tend to worry about what my co-workers think of me.
I often change my mind about decisions if my friends or family disagree.	I often change my mind about my decisions if my co-workers disagree.
I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	I am not afraid to voice my opinions, even when they are in opposition to the opinions of other members of my organization.
Being happy with myself is more important to me than having others approve of me.	Being happy with myself is more important than approval from my team.
It is difficult for me to voice my opinions on controversial matters.	It is difficult for me to voice my opinion on controversial work-related matters.
I tend to be influenced by people with strong opinions.	I tend to be influenced by co-workers that have strong opinions.
I judge myself by what I think is important, not by the values of what others think is important.	I judge myself by what I think is important, not by the values of other members of the organization.
Environmental Mastery	**Environmental Mastery**
I am good at juggling my time so that I can fit in everything that needs to get done.	I am good at juggling my time so that I can fit in everything that needs to get done at work.
I often feel overwhelmed by my responsibilities.	I often feel overwhelmed by the responsibilities of my job.
I am quite good at managing the many responsibilities of my daily life.	I am quite good at managing the many responsibilities of my daily work life.
I do not fit very well with the people and community around me.	I do not fit in very well with the other members of my organization or team.
I have difficulty arranging my life in a way that is satisfying to me.	I have difficulty arranging my work life in a way that is satisfying to me.
I have been able to create a lifestyle for myself that is much to my liking.	I have been able to create a work life for myself that is much to my liking.
I generally do a good job of taking care of my personal finances and affairs.	I'm good at taking care of the details related to my job.
In general, I feel I am in charge of the situation in which I live.	In general, I feel I am in charge of the situations in which I work.
The demands of everyday life often get me down.	The demands of everyday work life often get me down.

Personal Growth	Job Growth
I am not interested in activities that will expand my horizons.	I am not interested in activities that will expand my job.
I feel that I have developed a lot as a person over time.	I feel that I have developed a lot in my job over time.
When I think about it, I haven't really improved much as a person over the years.	When I think about it, I haven't really improved much at my job over the years.
I think it is important to have new experiences that challenge how I think about myself and the world.	I think it is important to have new experiences that challenge how I think about my job and the organization.
I don't want to try new ways of doing things at work--my life is fine the way it is.	I don't want to try new ways of doing things at work--my job is fine the way it is.
I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	I do not enjoy being in new situations at work that require me to change my old familiar ways of doing things.
There is truth to the saying you can't teach an old dog new tricks.	There is truth to the saying you can't teach an old dog new tricks.
For me, life has been a continuous process of learning, changing, and growth.	For me, my job has been a continuous process of learning, changing, and growth.
I gave up trying to make big improvements or changes in my life a long time ago.	I gave up trying to make big improvements or changes in my work a long time ago.
Positive Relations	**Positive Organizational Relationships**
I don't have many people who want to listen when I need to talk.	There aren't many members of my organization who want to listen when I talk.
I enjoy personal and mutual conversations with family members and friends.	I enjoy personal and mutual conversations with my team and other members of the organization.
I often feel lonely because I have few close friends with whom to share my concerns.	I often feel lonely because I have few people at work with whom to share my concerns.
It seems to me that most other people have more friends than I do.	It seems to me that most people have stronger relationships in the organization than I do.
People would describe me as a giving person, willing to share my time with others.	People would describe me as a giving person, willing to share my time with others.
Most people see me as loving and affectionate.	Most people at work see me as warm and congenial.
I know I can trust my friends, and they know they can trust me.	I know I can trust my co-workers, and they know they can trust me.
Maintaining close relationships has been difficult and frustrating for me.	Maintaining strong relationships at work has been difficult and frustrating for me.
I have not experienced many warm and trusting relationships with others.	I have not experienced many warm and trusting relationships with other members of my organization.

Purpose in Life	**Job Purpose**
I enjoy making plans for the future and working to make them a reality.	I enjoy making long-term plans for my job and working to make them a reality.
My daily activities often seem trivial and unimportant to me.	The daily activities of my job often seem trivial and unimportant to me.
I am an active person in carrying out the plans I set for myself.	I set and actively work toward goals related to my job.
I tend to focus on the present because the future nearly always brings me problems.	I tend to focus on the present at work because the future is nearly always filled with problems.
I don't have a good sense of what I'm trying to accomplish in life.	I don't have a good sense of what I'm trying to accomplish in my job.
I sometimes feel as if I've done all there is to do in life.	I sometimes feel as if I've done all there is to do in my job.
I used to set goals for myself, but that now seems like a waste of time.	I used to set goals for myself at work, but that now seems like a waste of time.
Some people wander aimlessly through life but I am not one of them.	I do not wander aimlessly through my work.
I live life one day at a time and don't really think about the future.	I take work one day at a time and don't really think about the future.
Self-Acceptance	**Professional Self-Acceptance**
I feel like many of the people I know have gotten more out of life than I have.	I feel like many of the people I know have gotten more out of their careers than I have.
In general, I feel confident and positive about myself.	In general, when I think about my career I feel confident and positive about myself.
When I compare myself to friends and acquaintances, it makes me feel good about who I am.	When I compare myself to my co-workers, it makes me feel good about who I am.
My attitude about myself is probably not as positive as most people feel about themselves.	My attitude about myself professionally is probably not as positive as most other people's impressions of themselves.
I made some mistakes in the past, but I feel that all in all everything has worked out for the best.	I've made some work-related mistakes in the past, but I feel that all in all everything has worked out for the best.
My past had its ups and downs, but in general, I wouldn't want to change it.	My career has had its ups and downs, but in general, I wouldn't want to change it.
In many ways, I feel disappointed about my achievements in life.	In many ways, I feel disappointed about the accomplishments I have made during my career.
When I look at the story of my life, I am pleased with how things have turned out so far.	When I reflect on my professional life, I am pleased with how things have turned out so far.
I like most parts of my personality.	I like most parts of myself professionally.

Appendix B - Psychological Climate Items

Supportive Management

My boss is flexible about how I accomplish my job objectives.

My manager is supportive of my ideas and ways of getting things done.

My boss gives me the authority to do my job as I see fit.

I'm careful in taking responsibility because my boss if often critical of new ideas.

I can trust my boss to back me up on decisions I make.

Role Clarity

Management makes it perfectly clear how my job is to be done.

The amount of work responsibility and effort expected in my job is clearly defined.

The norms of performance in my department are well understood and communicated.

Contribution

I feel very useful in my job.

Doing my job well really makes a difference.

I feel like a key member of the organization.

The work I do is very valuable to the organization.

Recognition

I rarely feel my work is taken for granted.

My superiors generally appreciate the way I do my job.

The organization recognizes the significance of the contributions I make.

Self-Expression

The feelings I express at work are my true feelings.

I feel free to be completely myself at work.

There are parts of myself that I am not free to express at work.

It is okay to express my true feelings in this job.

Challenge

My job is very challenging.

It takes all my resources to achieve my work objectives.

Appendix C - Job Satisfaction Items

All in all, how satisfied are you with your coworkers?

All in all, how satisfied are you with the supervision?

All in all, how satisfied are you with the work itself of your job?