

WELL-BEING FROM AN OCCUPATIONAL PERSPECTIVE:
TESTING A CONCEPTUAL MODEL

by

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Abstract

One of the key factors for promoting well-being lies in balancing one's daily life occupations and the nature of these occupations. Yet it is not clear what constitutes occupational balance, and its association to other factors has not been examined systematically. This dissertation proposed and tested a conceptual model for examining well-being from an occupational perspective using structural equation modeling. The proposed model stated the mediating role of occupational characteristics and occupational imbalance in the relationship between personality and well-being. Four studies were conducted in order to develop and test the model. The first three studies explored the measurement aspect of occupational balance and well-being, whereas the fourth study tested the overall model (the relationships among the model constructs). Method: 122 adults completed the Cross Impact Matrix (CIM) of the Personal Projects Analysis (PPA) to measure occupational balance; the Satisfaction With Life Scale (SWLS); the Positive Affect Negative Affect Scales, and the Self-Rated Health scale to measure well-being (study 1). As no correlation was found between well-being and occupational balance, measured by the CIM, a pilot sample (n=24) completed the same instruments, except occupational balance was measured using an alternative tool, the Inter-goal Relations Questionnaire (IRQ). Results indicated that occupational balance and occupational imbalance were two distinct dimensions that should be measured separately using unipolar scales. This led to additional studies while examining occupational imbalance using the IRQ and focusing on one aspect of well-being (life satisfaction). 288 adults completed the IRQ (occupational imbalance), the PPA Rating Matrix (occupational characteristics), the Big Five Inventory (personality traits) and the SWLS (well-being). Results supported the unidimensional structure of occupational imbalance (study 2) and well-being (study 3); whereas, the overall tested models were partially confirmed (study 4). Occupational characteristics served as significant mediators between personality and well-being, yet occupational imbalance did not. Conclusion: the quality of occupations is what is important to well-being, rather than the way individuals balance them. These findings are in line with very recent and innovative theories for viewing balance. New lines of inquiry

are suggested to further explore the concept of occupational balance and its effect on well-being.

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List of Abbreviations

SWB - Subjective well-being

PPA - Personal Project Analysis

CIM - Cross Impact Matrix

IRQ - Inter-goal Relations Questionnaire

SWLS - Satisfaction With Life Scale

PANAS - Positive Affect Negative Affect Scale

BFI - Big Five Inventory

SES - socio-economic status

SEM - Structural Equation Modeling

CFA - Confirmatory Factor Analysis

CFI - Comparative Fit Index

RMSEA – Root Mean Square Error of Approximation

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Dedication

I dedicate this dissertation to all the people who do not have balance in life, particularly those who unjustifiably are deprived from engaging in their chosen occupations.

Co-Authorship Statement

Chapter one will be revised into a manuscript co-authored with Dr. Tal Jarus and Dr. Catherine Backman at the University of British Columbia. As the first author, I was in charge of all aspects of the project including formulating research questions, literature review, research design, data collection, analysis and finding alternative methods to better answer the research question.

Chapter two and three will be revised into a manuscript co-authored with Dr. Tal Jarus and Dr. Bruno Zumbo at the University of British Columbia. My contribution to this manuscript included setting the research question, selecting the measurements and translating the questionnaires, analyzing the data and preparing the first version of the manuscript.

Chapter four will be revised into a manuscript co-authored with Dr. Tal Jarus, Dr. Catherine Backman and Dr. Bruno Zumbo at the University of British Columbia. As a first author I proposed a conceptual model, acquired knowledge on the Structural Equation Modeling method and hence analyzed the model.

All co-authors contributed to the identification and design of the research project and will assist in the preparation and revision of these manuscripts. I will be in charge of rewriting the manuscripts and submit them for publication.

Chapter 1 - Introduction

Literature review

The notions of occupation and occupational balance are fundamentally rooted in the profession of occupational therapy, since its inception, and in the discipline of occupational science. The therapeutic potential of occupation and occupational balance has been acknowledged considerably particularly in promoting recovery and well-being. The link among occupation, health, and well-being is strongly illustrated by Wilcock's (2005) statement: "lack of occupation or the wrong kind or mix of occupations can be more lethal than tripping over a rug" (p. 8). In fact, the importance of occupation to well-being has been acknowledged in other fields such as social and behavioral science and psychology. Well-being has gained noticeable attention particularly among rehabilitation clinicians, and serves as a leading outcome measure for treatment efficacy (AOTA, 2002; Renwick, Brown, & Nagler, 1996; WHO, 2001).

Although it is widely accepted that occupation is important to well-being, it is not fully understood which occupational characteristics contribute to well-being and what constitutes a balance among occupations. Moreover, occupational balance itself is a multi-layered concept that is viewed from different aspects, continually evolves, and is considered a challenging construct to measure accurately. The research question posed here is as follows: what are the factors that affect occupational balance, and in turn, how does occupational balance affect well-being? In order to address this question it is first necessary to examine how to measure occupational balance in congruence with a selected theoretical approach.

There is a call for developing integrated theoretical models to bridge the gap between occupation and well-being (Wilcock, 1998; Yerxa et al., 1989). Such models would make a conceptual contribution to the science of occupation and a clinical contribution to the practice of occupational therapy. In any attempt for a substantial contribution to the understanding of occupation, occupational balance, and well-being, two avenues of research must be pursued: theoretical and empirical. In the theoretical route, a conceptual

model is developed based on substantial theoretical assumptions and previous findings. This model identifies the factors that are believed to be associated with occupational balance and well-being and specifies the relationships between these factors. The empirical course examines: 1) the factors in the model assuring that the methodological approaches are in line with the theoretical assumptions underlying each concept, and 2) the structural relations between the factors as proposed by the conceptual model. In this dissertation a theoretical model for explaining well-being from an occupational perspective is proposed and tested.

In this chapter factors associated with occupational balance and well-being will be identified and defined, and support for the specification of the relationships between these factors will be provided. Subsequently, a proposed model is formulated which will serve as the overall hypothesis of this dissertation. Then the selected method of analysis, Structural Equation Modeling (SEM), will be presented including a discussion of its merits, above other methods, in examining the overall hypothesis. Finally, the sequence of four manuscripts will be presented, emphasizing the linkage among them and the role each one has served in pursuing a complete exploration of the research question.

Defining occupation

Occupational Therapy was founded on the belief that what people do influences their health and well-being. Early scholarly work in occupational therapy has postulated the importance of engagement in occupation as a vehicle for promoting recovery from illness or injury and well-being (Meyer, 1922 cited in Meyer, 1977; Slagle, 1922 cited in McColl, Law & Stewart, 1993; Reilly, 1966). In that sense, occupation is defined in a broader way than is typically viewed. It refers to a group of everyday life activities which is goal-directed, has meaning for the individual, and is familiar to their culture (Law et al., 1996). This may include occupations associated with self-care, leisure, work, education and more. Occupation has been recognized as a source of life satisfaction and a mechanism for meeting intrinsic needs and interests and values, which when met, improve perceived well-being. Through occupations, people can express and shape their identity, develop skills and gain satisfaction (Townsend & Polatajko, 2007).

Defining subjective well-being

Subjective Well-being (SWB) refers to the way individuals perceive their current life situation as a whole according to their own criteria (Diener, 1984). The concept of SWB is recognized as happiness in everyday language (Diener, Oishi, & Lucas, 2003). Diener (2000) suggests that SWB embodies two main aspects: cognitive and affective. The cognitive aspect refers to a global judgment of one's satisfaction with life. The affective aspect refers to the pleasant and unpleasant emotions and moods individuals experience. Not only does this approach to well-being derive from the individual point of view and experience, but also leaves it to individuals to decide on which aspect of life or life domain(s) (e.g., work, leisure, family, social relationship) they want to base their judgment on while reflecting on life satisfaction. Focusing on level of satisfaction within a person's salient aspects of life will make it possible to capture well-being more profoundly and accurately (Diener, 1994).

Well-being from an occupational perspective – a widespread tenet in various fields

Scholars in the area of occupational therapy, have strongly postulated the benefit of occupation to health and well-being, especially those occupations that have meaning for the doer and reflect one's identity (Christiansen, 1999; Christiansen, 2000; Law, Steinwender, & Leclair, 1998; Wilcock, 1998). In fact, Wilcock et al. (1998) found that when participants were asked what situations they associated with feelings of well-being, the most common response was related to occupations. Current occupational therapy models (e.g., AOTA, 2002; CAOT, 1997; Christiansen & Baum, 2005; Dunn, Brown, & McGuigan, 1994; Law et al., 1996; Townsend & Polatajko, 2007) address the benefits individuals gain from engaging in occupation. These models identify three important dimensions: person, environment and occupation. The model developed by Christiansen and Baum (2005) adds another important dimension termed well-being, and acknowledges the linkage between occupation and well-being. In addition, the Occupational Therapy Practice Framework (AOTA, 2002) states that one of outcomes of occupational therapy intervention, which is based on "engagement in occupation to

support participation in context" (p. 611), is the client's well-being. Moreover, a relatively new breed of scientist has emerged aiming to study human occupation, a field called occupational science. This interdisciplinary body of knowledge involves, inter alia, exploring the way occupations influence peoples' well-being.

Research on subjective well-being began with the exploration of the influences of demographic variables such as age, race, marital status, education, or income (e.g., Andrews, 1976; Wilson, 1967). As these variables were found to be weak in their ability to explain well-being researchers shifted their line of inquiry (Diener, Suh, Lucas, & Smith, 1999). Instead of asking *who* is happy, they examined *how* people become happy and *what* elements underlie this state. One of the research avenues that was embraced is related to what people are trying to do and achieve. This perspective acknowledges that an individual's well-being not only resides in the attainment of goals but also in the process of moving toward them. This process is exhibited in peoples' actions or occupations. Thus, this process focuses on the involvement aspect of the activity, its qualities, its context and the experience it provides for the doer. An explicit example for such approach lies in Csikszentmihalyi's (1997) theory of *flow*. He viewed the activity as a key to well-being, in particular the subjective experience derived from engaging in an activity. The experience of flow occurs when a person is fully engaged in an activity that they lose track of time, when the doer and the doing melt into a unity resulting in enjoyment, interest and motivation. A flow state is achieved when the activity demands (e.g., challenge) are an optimal match to the person's interests, skills and abilities (Csikszentmihalyi & Hunter, 2003). Other scholars applied a similar approach, for example Kahneman, Krueger, Schkade, Schwarz and Stone (2004) who suggested that well-being is influenced by the feelings that people attribute to their activities, and Diener et al. (1999) who stated that well-being is embedded, inter alia, in what people are trying to do or their pursuit of a goal.

Little's (1983) work is another relevant approach to the study of occupation and well-being. Informed by social ecology and personality psychology, he recognized the *doing* aspect of personality, expressed by people's daily life actions, as an indicator for individual differences as well as for well-being. Little (1983) used the term *personal project* to describe these actions, which are synonymous with daily occupations. In fact,

he suggested that asking people to reflect on their personal projects or occupations has a great potential in explaining their well-being. Indeed, several occupational therapist scholars have adopted his method while studying occupation and well-being (e.g., Christiansen, Backman, Little, & Nguyen, 1999; Christiansen, 2000; Forwell, 2006).

Given all that, the tenet that occupation is associated with well-being is well documented not only in the occupational therapy and occupational science literature, but also in other fields. Although scholars in the field of well-being did not specifically use the term occupation to explore well-being (some used activity, personal projects or goals) they acknowledge the doing aspect of everyday life as a source for studying individual well-being. Thus, the notion of occupation in relation to well-being is considerably embedded in various fields which provide substantial support for the theoretical relationship between occupation and well-being.

Occupational balance

Belief that living a balanced life is important to well-being has received growing attention in research to date, and is widely accepted (Christiansen, 1996; Matuska & Christiansen, 2008). Christiansen and Matuska (2006) traced the origin of the concept of occupational balance back to ancient philosophers such as Aristotle. He described human flourishing in the context of life activities that were balanced to the interests, goals values and capacities of the individual (Aristotle, 1908 cited in Christiansen & Matuska, 2006). The notion of leading a balanced life has intrigued researchers from different fields: economics, social and behavioral science, psychology, public health, occupational science and occupational therapy (Christiansen & Matuska, 2006; Westhorp, 2003) as well as in the popular media (Backman, 2010).

In the early twentieth century, Adolph Meyer, a psychiatrist and one of the founders of the occupational therapy profession in the United States, acknowledged the therapeutic potential of balance in occupations. He advocated a balance among the "big four - work and rest and play and sleep, which our organism must be able to balance even under difficulty" (Meyer 1922 reprinted in Meyer, 1977, p. 641). This philosophy of incorporating a balanced daily pattern of work, play and rest guided the clinical work of Slagle (1922, cited in McColl et al., 1993) and Reilly (1966) within people with mental

disabilities. Kielhofner (1977) further developed the notion of occupational balance by postulating the model of *temporal adaptation*. He asserted that the natural temporal order of daily living is organized around activities of self-maintenance, work, play and rest. With the development of occupational therapy, the notion of occupational balance has come to be seen as balance among occupations rather than among occupational areas such as: work, play and self-care (Primeau, 1996; Reed, 1992).

At first glance, the term occupational balance, with origins in occupational therapy, might be perceived as similar to much more popular terms derived from other fields: work-life balance, work-leisure balance and work-family balance. Yet it is different. First it is perceived in a broader sense as Backman (2010, p. 233) has stated: "Occupational balance considers a wide range of occupations associated with all aspects of life, including caring for oneself and others, working, playing, learning, socializing and volunteering, to cite some common categories". Second, occupational balance does not necessarily address work or paid employment. In fact it moves away from any dichotomous categories of life domains and leaves it to the individual to decide what specific occupations they try to keep in a balanced state. Some people try to balance occupations derived from non-work life domains, such as *taking care of a sick life-partner* and *playing bridge*. Thus, occupational balance, as opposed to closely related concepts, can be applied to broader populations who might not engage in paid employment such as retirees, children, older adults and people with disabilities.

Although occupational balance is a widely accepted term, there is little consensus on its definition. Backman (2004) listed a dozen different definitions for the concept of occupational balance. Yet, there is general agreement that occupational balance is a positive, desired, even ideal construct that represents a good life and promotes well-being. Indeed, several qualitative studies in the occupational therapy literature revealed that participants linked the concept of occupational balance to well-being and health (Håkansson, Dahlin-Ivanoff, & Sonn, 2006; Piskur, Kinebanian, & Josephsson, 2002; Wilson & Wilcock, 2005).

Another characteristic all researchers agree upon concerning occupational balance is its complex, multi-layered nature, and thus the intricacy in measuring it. There are many ways in which to view the concept of occupational balance, and each view defines the

concept differently, may address one or more layers of the concept or just a specific element. Consequently, each view suggests different measurement approaches. Christiansen (1996) summarized relevant literature and postulated three main perspectives: 1) time use 2) chronobiological balance and 3) relationships among life tasks or occupations. The time use approach focuses on the way individuals allocate their time among occupations where dedicating equal amounts of time for each occupational area is considered a balanced state. This perspective has been criticized more than once (Christiansen, 1996; Christiansen & Matuska, 2006; Jonsson & Persson, 2006; Westhorp, 2003), arguing that this objective approach to balance miscaptures the experience that individuals derive from engaging in an occupation. Critics say a subjective approach should be embraced that focuses on the quality, richness and benefit one gains from their occupations rather than just the amount of time they dedicate to each. The second perspective, chronobiological balance, addresses the rhythm of daily occupations where one's occupational behavior is synchronized with human biological rhythms such as the sleep-awake cycle. This approach has potential to improve our understanding of occupational balance yet it raises the following questions: Is it just the configuration or pattern of daily occupation that leads to a balance state and promotes well-being? It is plausible that one feels their daily pattern of occupation fits their biological rhythm (i.e., a balance state) yet the nature of their occupations might evoke stress and dissatisfaction (i.e., an imbalance state). Thus, it appears that this approach is also missing the subjective experience of the occupation itself.

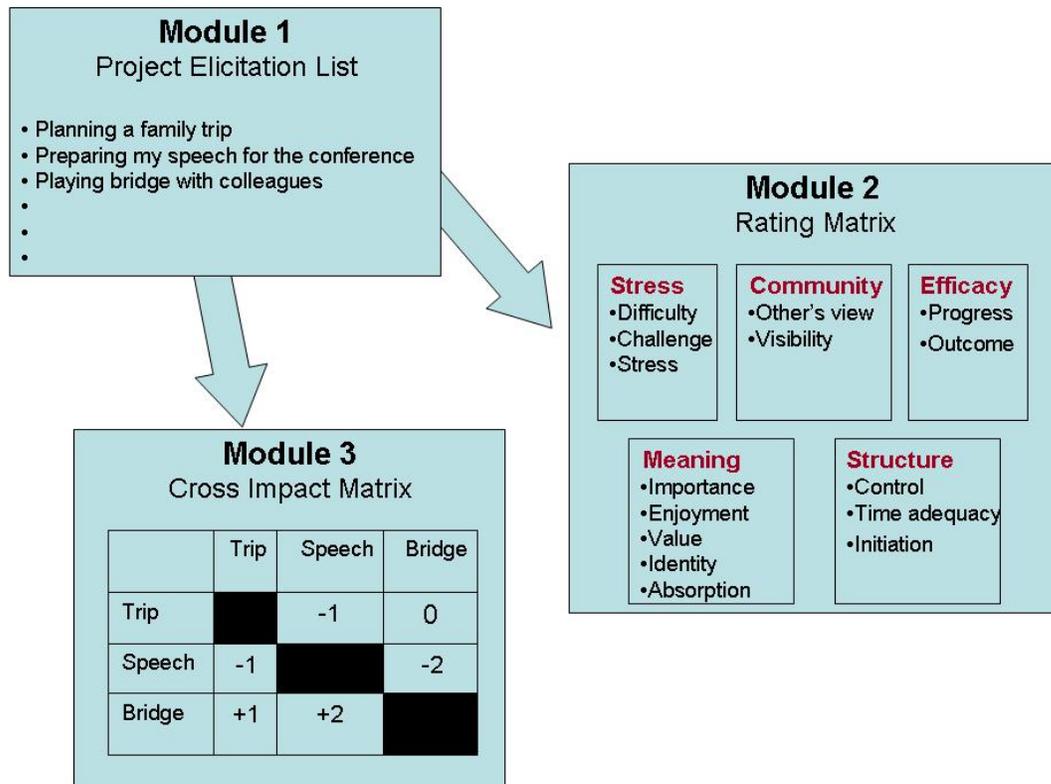
Backman and Anaby (in press) state that examining occupational balance needs to consider not just the observable pattern of occupations but also the nature and the quality of these occupations. This line of thinking falls with the third perspective on balance - the inter-relationship among one's unique occupations focusing on the impact of occupations on each other. Here, positive and facilitating impacts of each occupation on another imply a harmonious or balanced state, whereas negative and interfering impacts among occupations signify an occupational repertoire characterized by conflict or lack of balance (imbalance).

The study presented in this dissertation embraces the third approach to occupational balance suggested by Christiansen (1996) who drew on Little's (1983) socio-ecological

perspective and considered it as a useful approach for the study of occupation and occupational balance. The socio-ecological perspective addresses the contextual and the personal facets imprinted in human behavior and actions. Inspired by this approach to human behavior, Little (1983) postulated the term personal projects and developed the personal project analysis (PPA) method in which one of its modules examines the impact of occupations on each other. Personal project refers to "interrelated sequences of actions intended to achieve some personal goal" (Palys & Little, 1983, p. 1223). Scholars in occupational therapy have acknowledged the conceptual similarity between personal project and occupation and thus adopted the PPA method in studying occupation (Backman, 2001; Backman, 2004; Christiansen, 1996; Christiansen, Little, & Backman, 1998; Christiansen et al., 1999; Christiansen, 2000). Thus, in this dissertation the term occupation will be used to represent personal project.

The PPA method was developed to describe and measure multiple characteristics of daily occupation. It consists of three modules (see Figure 1.1). The aim of the first module, *Eliciting Project Lists*, is to generate a list of occupations a person is currently engaged in; in the second module, *Rating Matrix*, the listed occupations are evaluated according to various components (e.g., importance, enjoyment, etc.); finally, in the third module, the *Cross Impact Matrix*, the impact of each occupation on another is rated. In the initial stages of the study presented in this dissertation, the third module which focuses on the inter-relations among occupations served as a way to measure occupational balance.

Figure 1.1 The personal project analysis



This approach to occupational balance, which looks at the inter-relations among occupations, meets most of the elements that researchers might take into account while exploring the concept suggested by Backman and Anaby (in press). The elements are: subjective, individual, contextual and well-being related. Clearly it is subjective as it reflects the person's point of view; it is also an individual definition as occupational areas are not imposed by the researcher and each individual analyzes their own unique occupations; it is contextual as it includes the environment and social facets that are imprinted in occupations and finally it has been associated with well being (Little & Chambers, 2004).

Occupational characteristics

As aforementioned, occupation is believed to be associated with well-being. Yet, it is not clear what specific occupational characteristics promote well-being, what experiences are

derived from engaging in occupations, and how they affect well-being. Little's (1983) PPA method, specifically, factor analysis of the project components from the second module in the PPA process, i.e., the Rating Matrix (see Figure 1.1), identified five factors that characterize one's occupations and influence well-being. These characteristics are: meaning (the extent to which one's occupations are important and congruent with the doer's values), structure (how well one's occupations are organized and under their control), efficacy (to what degree occupations are in progress toward successful accomplishment), community (the extent to which one's occupations are supported by others), and stress (level of difficulty in occupations). Studies that examined the relation between occupational characteristics and well-being using the PPA showed that occupations that are congruent with one's identity (Christiansen, 2000), supported by others (Salmela-Aro & Little, 2007; Wenzel, 2000) characterized by low levels of stress and with high levels of efficacy are associated with higher levels of well-being (Christiansen et al., 1999; Christiansen, 2000; McGregor & Little, 1998; Yetim, 1993).

Moreover, occupational characteristics are associated with occupational balance. It has been found that involvement in occupations characterized by a low level of enjoyment and a high level of difficulty were associated with conflict among occupations (occupational imbalance) as well as with low levels of life satisfaction (Palys & Little, 1983). Similarly, Hakansson, Dahlin-Ivanoff and Sonn (2006) found that engaging in meaningful occupations with a sense of control is a mechanism that enables people to achieve balance in everyday life.

Therefore, occupational characteristics have a direct effect on well-being as well as on occupational balance. As occupational balance has a direct effect on well-being it appears that occupational characteristics have also an indirect effect on well-being through their effect on occupational balance. In other words, occupational balance functions as a mediator between occupational characteristics and well-being.

Personality, occupation and well-being

Another factor that had a consistent effect on well-being is personality traits (Diener et al., 1999). There are five generally accepted traits, termed the *big five model* of personality: extraversion, agreeableness, conscientiousness, neuroticism and openness.

Extraversion is depicted by attributes such as excitement and stimulation seeking, sociability and assertiveness; *Agreeableness* involves tendencies toward being good-natured, trusting and altruistic; *Conscientiousness* is associated with characteristics such as being organized, disciplined, task-oriented, following norms and rules; *Neuroticism* is characterized by attributes such as being nervous, worried, anxious and emotionally insecure. *Openness* entails broad interests, being imaginative and insightful (John & Srivastava, 1999). There is evidence that neuroticism is negatively associated with well-being while extraversion, openness, agreeableness and conscientiousness are positively related to well-being (DeNeve & Cooper, 1998; Diener et al., 2003; Watson & Clark, 1997).

Little (1996) addressed these five personality traits as the basic level of personality research and labeled them as the *having* aspect of personality. He argued that in addition to *having* there are two more levels of personality research that are more important to well-being, *doing* and *being*. The second level, the *doing* aspect of personality, is illustrated by people's personal actions or what he termed as personal projects (or occupations). The third level, the *being* aspect of personality, addresses the narrative underlying a personal project or an occupation. Little, Lecci and Watkinson (1992) demonstrated the linkage between the having (traits) and the doing (occupations) of personality. In other words, they showed that the five personality traits are associated with the five occupational characteristics. For example, people with higher levels of neuroticism reported occupations characterized by high levels of difficulty and stress and lower levels of efficacy while conscientiousness was positively correlated with meaning, efficacy and community (Little et al., 1992).

Thus, not only is personality associated with well-being, but it also associated with occupational characteristics, which in turn are associated with well-being. Hence, occupational characteristics serve as mediators between personality and well-being. Not only is there empirical evidence for the relation between personality, occupational characteristics and well-being, but it is also theoretically supported. The socio-ecological model of personality proposed by Little (1999) positions personal actions (i.e., occupations) as mediators between one's disposition and well-being.

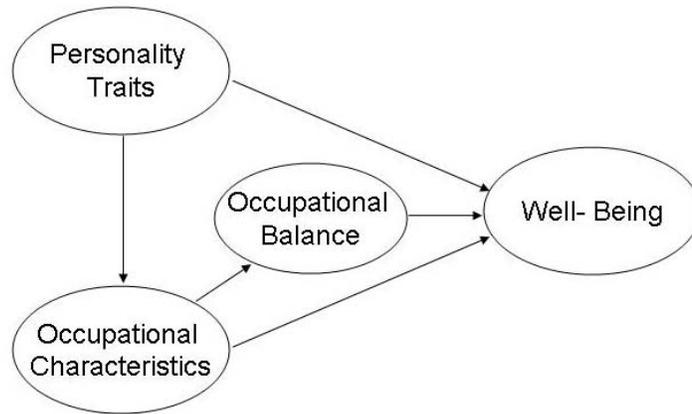
The research hypothesis

The above literature review identified the following variables that affect well-being: occupational balance, occupational characteristics and personality traits. The relations between the variables are specified in Figure 1.2 which represents the study hypothetical model. This model states the mediating role of occupational characteristics and occupational balance in the relationship between personality and well-being. Looking from left to right, personality traits, occupational characteristics and occupational balance have a direct effect on well-being. In addition, personality has an indirect effect on well-being through its effect on occupational characteristics. Occupational characteristics have an indirect effect on well-being through their effect on occupational balance i.e., well-being is influenced by occupational balance, that is influenced by occupational characteristics, which in turn are influenced by one's personality traits.

Hence, the general hypothesis of this study is that the proposed model in Figure 1.2 will fit the data gathered from a prospective sample of employed adults. Each pathway within Figure 1.2 constitutes a secondary hypothesis:

- 1) Personality traits, occupational characteristics and occupational balance have a direct effect on well-being
- 2) Occupational characteristics serve as mediators between personality and well-being.
- 3) Occupational balance serves as a mediator between occupational characteristics and well-being

Figure 1.2 The proposed model.



Testing conceptual models using structural equation modeling

In order to confirm the structural relationships among personality traits, occupational characteristics, occupational balance and well-being, as stated in the proposed model, a specific method must be applied. In fact, only rigorous methods can test the complex hypotheses set earlier (Figure 1.2). Structural Equation modeling (SEM) is such a method.

SEM, a theory testing method, aims to confirm a theory rather than to explore it (Anderson & Gerbing, 1988). SEM is a combination of factor analysis, linear regression and path analysis (Bollen & Long, 1993). It allows the researcher to test a complex set of linear regressions simultaneously while enabling a factor to serve as both an independent and a dependent variable (Bollen & Long, 1993). This double role of a factor allows one to explore, for example, the factors that affect occupational balance, and in turn, how occupational balance affects well-being. It is impossible to examine such questions using linear regression where there is only one dependent variable and thus only one regression equation at a time.

Moreover, SEM, which subsumes Confirmatory Factor Analysis (CFA), reassures that each construct in the model is measured properly by confirming its dimensionality

(Anderson & Gerbing, 1988). In fact, the variables in the model are latent variables. A latent variable, unlike an observed variable, is not measured directly; it comes from the correlations among its observed variables. The goal of the factor analysis is to reproduce the observed covariance matrix, i.e., the inter-correlation between the observed variables underlining the latent variable. Hence SEM, as opposed to other methods, does not analyze the raw data but rather the covariance matrix. By doing so SEM deals with measurement error. That is to say CFA, applied in SEM, makes estimated relationships among latent variables less contaminated by measurement error (Bollen & Long, 1993).

Thus, not only does SEM enable the researcher to test the interrelationships between the constructs in the model (i.e., the structural model), but it also verifies the validity of each construct in the model (i.e., the measurement model). In other words, SEM assures that the way each construct was measured is in line with its theoretical definition. Moreover, the relations between the constructs, tested by SEM, are grounded in theory. Thereby, SEM offers great and unique potential for furthering theory development.

The following chapters

The format of this dissertation follows the guidelines set forth in the *manuscript based dissertation* of Faculty of Graduate Studies at the University of British Columbia.

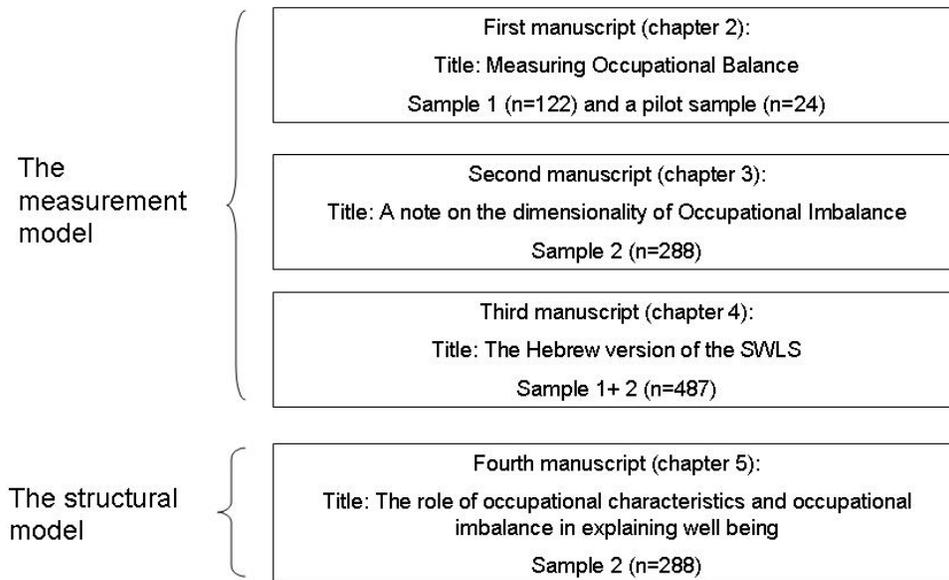
This dissertation includes four manuscripts/chapters and a final discussion. Figure 1.3 presents the sequence of the dissertation manuscripts. The first three manuscripts describe steps in testing the measurement model while the last paper describes the testing of the structural model. The purpose of the measurement model was to examine the constructs of occupational imbalance (manuscripts 1 and 2) and well-being (manuscript 3). This phase had to take place before the structural model, i.e., the relationships between the variables, was tested. Thus manuscript 4 presents the proposed model and the results of its testing (manuscript 4).

Two samples of participants were used in order to answer the study's complex question, i.e., what is the structural relationship among personality, occupational characteristics and occupational balance while affecting well-being. The first sample included 122 working adults and a pilot sample of 24 subjects. The second sample

included 288 participants. Data from the first sample were used to examine the measurement/methodological aspect of the concept of occupational balance and is presented in manuscript 1. Findings from this study indicated that the initial tool used to measure occupational balance exhibited a methodological limitation and thus required alteration. A pilot study (N=24, second study in manuscript 1) tested the new measurement for occupational balance and found the new tool to be appropriate. Moreover, findings from this pilot study suggested (a) to examine the negative facet of occupational balance which is occupational imbalance, using the alternative assessment; and (b) to focus on the cognitive aspect of well-being, which is life satisfaction, rather than on the affective aspect.

The construct of occupational imbalance was further examined using the new identified tool with the second sample (N=288) and presented in manuscript 2. The construct of well-being was examined using a larger sample (N=487) to further demonstrate its validity and presented in manuscript 3. Finally, once the measurement model was validated, the proposed model was tested using the second sample (N=288) and presented in manuscript 4. Hence, the first three manuscripts served as building blocks for the analysis of the structural model, presented in the last manuscript.

Figure 1.3 The dissertation's manuscripts



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Chapter 2 –Measuring Occupational Balance (Manuscript 1)¹

Introduction

Occupational balance is a central and fundamental concept in the occupational therapy literature, rooted in the very early stages of the profession's development. At the beginning of the last century, when the profession was established, it was postulated that occupational balance promoted well-being and health (McColl, Law & Stewart, 1993; Meyer, 1977; Reilly, 1966). However, to date, this concept has neither been uniformly defined nor systematically examined. In fact, occupational balance is a multi-layered concept that can be viewed from different perspectives (Backman & Anaby, in press). Consequently, there is no specific assessment that can capture it fully and directly but theory-derived assessments that measure some indicators of it in an attempt to add more pieces to solving the puzzle. One perspective of occupational balance lies in the interrelations among one's unique occupations where facilitation among occupations denotes a balanced state and interference among occupations indicates lack of balance (or imbalance) (Backman, 2001; Christiansen, 1996). Recently, there has been a debate in the literature whether interference and facilitation among occupations are two opposite attributes of occupational balance or two distinct features that can co-exist (Riediger, 2007). This debate raised a methodological question: should the interrelations among occupations (or occupational balance) be measured as one bipolar or two separate unipolar measures? Thus, the purpose of this first study was to investigate the relationship between occupational balance and subjective well-being (SWB). As the results of this study using a bipolar measure yielded no correlations between occupational balance and SWB, a second, pilot study investigated the correlation between unipolar measures of occupational balance and SWB.

Occupation and Occupational Balance

¹ A version of this chapter will be submitted for publication. Anaby, D., Jarus, T. and Backman, C. Measuring Occupational Balance.

First, the concept of occupation must be defined and its affinity to similar concepts must be clarified. While there are many definitions of occupation, some common characteristics can be found in them. Christiansen and Baum (2005) describe four characteristics:

Occupations are human pursuits that (a) are goal-directed (b) are performed in contexts that influence how and with whom they are done, (c) can be identified by the doer and others, and (d) have meaning to the doer as well as shared meaning with others (p. 5).

The present study embraced Law et al.'s (1996) definition of occupation as a group of everyday life activities, which are goal-directed, meaningful to the individual, and culturally relevant.

A closely related concept is *personal project* which is defined as "interrelated sequences of actions intended to achieve some personal goal" (Palys & Little, 1983, p. 1223), for example, *writing my master's thesis in international relations by the end of the year*. One might say that the aforementioned four characteristics of occupation suggested by Christiansen and Baum (2005) are illustrated in the scope of the term personal project. Akin to occupations, personal projects are highly *individual* constructs that frame the *doing in context*; they are *goal-oriented* and can be imbued with *meaning*. Moreover, the concept of personal project is in line with the occupational therapy taxonomy for understanding occupations (Polatajko et al., 2004). This taxonomy includes task (e.g., putting the article in a binder), activity (e.g., organize my references), occupation (e.g., writing a thesis), and role (e.g., student). Furthermore, Persson, Erlandsson, Eklund and Iwarsson (2001) claim that when any given task is carried out it becomes an occupation as it is interpreted and valued by the doer.

Indeed, scholars in occupational therapy acknowledge that personal project is a useful unit of analysis to study occupation (Backman, 2001; Backman, 2004; Christiansen, 1996; Christiansen, Little, & Backman, 1998; Christiansen, Backman, Little, & Nguyen, 1999; Christiansen, 2000; Forwell, 2006). Other conceptually similar terms are personal goals, pursuits or strivings (Little, 2007). Aside from their common theoretical underpinnings, they are comparable at an empirical level (Brunstein, 1993; Omodei & Wearing, 1990; Riediger, 2007). In fact, Omodei and Wearing (1990) found that when

participants were asked to list projects or goals they came up with similar examples both in number and in content. Thus, for the sake of clarity, we will use the term occupations to represent both personal projects and personal goals.

Researchers in the fields of occupational science and occupational therapy have suggested several ways to look at balance in occupation in an attempt to define and measure it accordingly. Three perspectives on occupational balance reviewed by Christiansen (1996) refer to 1) time use, 2) chronobiological balance and 3) relationships between occupations. The first considers the way individuals allocate their time between occupational areas (e.g., work, leisure, rest) where equal time allocation between these areas is considered as a balanced state. However, this aspect has been frequently criticized (Christiansen, 1996; Christiansen & Matuska, 2006). One of the salient arguments was that the meaning and benefit that the person gains from the occupation, as well as the context of the occupation, are not adequately captured when only considering quantitative allocation of time. These qualitative features of the activity are important to understanding the concept of balance, particularly when trying to explain how occupational balance contributes to a sense of well-being. Moreover, studies using this notion of a relatively equal time allocation across occupational performance areas did not yield consistent results (Schorn, 1985; Yerxa & Baum, 1986). Thus, it appears that this approach to balance lacks theoretical and empirical justification. Christiansen's (1996) second perspective, chronobiological balance, focuses on the concordance of the biological rhythm (e.g., awake/sleep cycles) and the individual's daily activity behavior. Although this seems to be a useful approach to explore balance, this biological aspect to balance does not capture the experience derived from the occupation. The third perspective on balance is based on the *socio-ecological* approach, which considers one's engagement in occupations in terms of the characteristics of the occupation, including environmental, social and personal. Occupational balance, according to this approach, is focusing on the interaction among one's occupations where harmony among them implies a state of balance and conflict among occupations suggests a lack of balance.

More recent definitions of the concept of occupational balance emerging in the literature include: 1) balance as the discrepancy between actual engagement in occupations versus the ideal or desired engagement (Wilcock et al., 1997); 2) a state

where individuals' skills and competence are exhibited in their occupational range (Westhorp, 2003); 3) a dynamic relationship among different affective experiences derived from occupations (Jonsson & Persson, 2006); 4) an experience of fluctuations along a continuum of imbalance and balance dependent on the extent to which people engage in meaningful occupations (Håkansson, Dahlin-Ivanoff, & Sonn, 2006); 5) a state that is achieved when people participate in occupations that meet their psychological needs (Christiansen & Matuska, 2006) and 6); the extent to which individuals' occupations are congruent with their values (Pentland & McColl, 2008). These definitions exhibit the many angles occupational balance can be viewed from and demonstrate its evolving nature. Although these theoretical definitions have a promising potential in capturing the concept of occupational balance and its relation to well-being, only a few operational strategies to measure occupational balance empirically have been demonstrated in the literature.

We suggest that measures of occupational balance should capture individual and contextual aspects. As an individual concept, it should reflect one's point of view (as opposed to an objective aspect such as time allocation) and reflect one's unique "occupational world". By that we mean that the person should analyze and evaluate balance among their own personal occupations and *a priori* occupational areas would not be imposed upon them (such as work, leisure, activity of daily living, family, physical or any kind of activity classification). This approach to balance is compatible with other scholars' perspectives (Csikszentmihalyi & Hunter, 2003; Jonsson & Persson, 2006) and moves away from dichotomous classifications of daily life (i.e., work/leisure) while looking at the quality of one's occupation (e.g., how beneficial and rewarding it is). Some occupational areas, such as work or school for instance, might not be relevant for certain populations (Primeau, 1996). Therefore, if our goal is to fully capture the concept of balance in a manner suitable for all populations, we should move away from the cultural categorization of our daily life and look at one's occupations themselves, focusing on their nature and their context.

The Personal Project Analysis (PPA) (Little, 1984) is one empirical approach to measuring occupational balance, consistent with the socio-ecological definition of the concept

(Backman, 2001). This approach examines engagement in occupations (personal projects) including the environmental, social and personal restraints and resources that influence occupation, thereby taking into account the context in which occupations are performed. The PPA has been used in prior studies of occupation (Christiansen et al., 1998; Christiansen et al., 1999; Christiansen, 2000) and one part of its process, the Cross Impact Matrix (CIM), particularly seems to address the notion of balance across occupations. The PPA is a method for identifying current goal-directed occupations, analyzing the characteristics of each occupation, and their impact on each other (which reflects level of occupational balance). This latter part, the CIM, evaluates the interaction among one's occupations by looking at the negative or positive impact of each occupation on another within the individual's list of occupations. The scale ranges from (-2), indicating very negative impact to (+2) indicating very positive impact. Thus, the CIM method considers balance as a one dimensional concept and measures it on a bipolar scale.

The Relation between CIM and Well-Being – Research Evidence

Subjective well-being (SWB) refers to a person's perception of his or her current overall life situation. Pavot & Diener (1993) suggest that SWB embodies two main aspects, cognitive and affective, which in turn include three distinct dimensions: life satisfaction, positive affect and negative affect. The former dimension, life satisfaction, refers to a global judgment of one's life. The second dimension, positive affect, refers to the extent of the individual experience of pleasant emotions and moods. And the last dimension, negative affect, refers to the extent of the individual experience of unpleasant emotions and moods. In the present study, we followed Watson, Clark and Tellegen's (1988) recommendation and addressed the two affect factors as distinctive (rather than opposing) dimensions.

Studies that examine SWB and occupational balance using the socio-ecological perspective of interrelations among occupations do not yield consistent results. One study shows that conflict among occupations (measured using the CIM of the PPA) was associated with lower levels of well-being (Palys & Little, 1983). Other studies did not

central to the individual's project system as a whole; those that are most resistant to change, most extensively connected with other projects, and intrinsically valued by the person such that without them, the meaning of one's life would be compromised (Little, 2007, p. 43).

Therefore, the first study presented here examines whether occupational balance, measured by the relationship among occupations in general and among core occupations in particular, can explain subjective well-being as measured by three dimensions: life satisfaction, positive affect and negative affect.

Study 1

Method

Participants and procedure

This cross-sectional study included healthy, working-aged adults between 27 and 60 years old residing in Israel. Inclusion criteria were (a) a minimum of 10 years of education, (b) employed at least 20 hours per week because part-time employment did not predict a satisfactory balance among occupations (Warren, 2004), (c) employed for a minimum of two years to ensure participants' jobs were not new (which might affect occupational balance and well-being), and (d) no physical and/or mental disabilities. Shift workers were excluded because their work style might affect their chrono-biological balance. Therefore, this criterion helped to assure that occupational balance is measured only from a socio-ecological perspective.

A convenience sample of 122 adults was recruited by trained occupational therapy students via snowball sampling method. Data were collected during an individual meeting.

After signing a consent form, participants completed a packet of 4 self-administered questionnaires set in a randomized order. The study was approved by the Behavioural Research Ethics Board of Tel Aviv University (see Appendix 1).

Measures

Occupational balance. We used two modules of the Personal Project Analysis (PPA): the project elicitation list and the Cross Impact Matrix (CIM) (Little, 1984). In the first module, participants were asked to list their current occupations (personal projects), to select the 10 most relevant occupations and then to mark the five occupations which they considered to be core occupations. The CIM evaluated the level of conflict or harmony among the 10 occupations (see Appendix 2 Module 3). Using a matrix that included the participant's 10 occupations, participants rated the impact of each occupation on each of the other 9 occupations in turn. Impact was rated using a 5-point scale ranging from very negative (-2), through (0) to indicate neutral impact, to very positive impact (+2). The total CIM score was the sum of the values, and ranged from -180 (representing an occupational system characterized by conflict) to +180 (representing harmony among one's occupations) (Christiansen et al., 1998). The PPA's validity and reliability has been demonstrated (Backman, 2001; Little, Lecci, & Watkinson, 1992). In this study, we calculated additional scores from the CIM: a sum score that reflected the level of occupational balance among one's five core occupations (ranging from -40 to +40); the sum of positive impacts (all positive values), the sum of negative impacts (all negative values), the number of plus signs in the matrix, the number of negative signs in the matrix, and the number of zero (or neutral) values.

Subjective Well-Being. We used two questionnaires: 1) the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) and 2) the Positive and Negative Affect Scales (PANAS) (Watson et al., 1988). The SWLS relates to the cognitive component of SWB where the individual was asked to judge their satisfaction in life as a whole. It contained five statements to which participants rated their level of agreement on a 7-point scale. The score was calculated by the sum of the ratings and ranged from 5 (*minimal life satisfaction*) to 35 (*maximal life satisfaction*). The SWLS

reliability and validity has been demonstrated (Pavot & Diener, 1993; Vassar, 2008). The PANAS reflects the affective component of the SWB concept and contains two scales. Each scale consisted of 10 items that referred to two dimensions of mood, one for positive affect and the other for negative affect. The 20 items were set randomly and participants rated how frequently they had experienced each mood in general on a 5-point scale. By summing the assigned values, two scores were generated, one for each of the positive and negative affect scales, that ranged from 10 (*low*) to 50 (*high*). This questionnaire's factorial validity and internal consistency have been demonstrated (Watson et al., 1988). Thus, three separate scores of SWB were generated from these instruments: level of life satisfaction, positive affect and negative affect.

Demographic variables were collected using a demographic questionnaire where three indicators of socio-economic status (SES) were assessed: 1) income 2) education 3) household density. The latter indicator addresses population density inside the housing unit in terms of person per room (Lawrence, 2006). A ratio between number of people living in the household and number of rooms was calculated. Lower ratios indicate lower levels of density and higher levels of SES.

Data analysis

Descriptive statistics were used to examine the distribution of each variable. Distribution plots, as well as Kurtosis and Skewness coefficients (closer to zero), served as indicators for determining normal distribution of each variable (Stevens, 2002). When a non-normal distribution was diagnosed in one of the variables a non-parametric test was used (Spearman) to examine the correlation between occupational balance scores and the three measurements of well-being. The level of significance was set at 0.05 for all statistical tests using SPSS Version 14.

Results

Sample Characteristics

Our convenience sample included 122 adults (43% male) with a mean age of 38.6 (SD=10.4). Seventy-two percent of participants were living with a partner and 58% had children. Participants worked an average of 42.5 hours per week (SD= 12.8) and had 15.2 (SD=2.3) years of education. Forty-three percent of the participants had above the Israeli average income, and for all participants the household density (number of people per room) ranged from 0.25 to 2 (mean=0.9, SD=0.4).

CIM scores and well-being

Table 2.1 presents the scale values distribution as well as the scale scores generated from the CIM. The "0" value was selected most frequently, and on average, participants assigned a 0 value in 55.5 out of 90 cells (SD=18.1). In other words, the "0" value, which represents the scale mid-point and indicates that an occupation has neither positive nor negative impact on other occupations, was assigned 61% of the time. Most of the Kurtosis and Skewness values are larger than 0 which indicates a non-normal distribution. Therefore, a Spearman correlation was used to examine the relationship between occupational balance and well-being (see Table 2.2).

No significant correlations were found between any of the measures of occupational balance, as calculated from the CIM, including the core occupations, and any of the three measures of well-being.

Table 2.1 Descriptive statistics of the CIM scores (n=122)

| CIM Scores | Mean | SD | Min | Max | % ^a | Kurtosis | Skewness |
|--|--------|-------|-----|-----|----------------|----------|----------|
| Number of zeros | 55.49 | 18.17 | 4 | 88 | 61.66 | -0.16 | -0.64 |
| Number of minus signs | 17.11 | 13.30 | 0 | 57 | 19.01 | 0.51 | 0.91 |
| Sum of minus signs | -21.47 | 18.02 | -84 | 0 | | 1.04 | -1.11 |
| Number of plus signs | 16.22 | 14.41 | 0 | 66 | 18.02 | 0.74 | 1.17 |
| Sum of plus signs | 22.71 | 20.72 | 0 | 97 | | 1.51 | 1.34 |
| Occupational balance (total CIM score, 10 occupations) | 1.25 | 30.42 | -72 | 97 | | 0.53 | 0.30 |
| Core occupational balance (CIM score, 5 occupations) | 1.43 | 10.17 | -19 | 32 | | 0.24 | 0.54 |

Note. CIM=Cross Impact Matrix; ^a=percent out of 90 options

Table 2.2 Spearman correlation between CIM's scores and measures of SWB (n=122)

| | Subjective Well-Being | | | | | |
|---|-----------------------|----------|-----------------|----------|-----------------|----------|
| | Life satisfaction | | Positive affect | | Negative affect | |
| | <i>r</i> | <i>p</i> | <i>r</i> | <i>p</i> | <i>r</i> | <i>P</i> |
| Number of zeros | -0.02 | 0.84 | -0.05 | 0.61 | 0.01 | 0.93 |
| Number of minus signs | -0.04 | 0.69 | 0.05 | 0.57 | 0.15 | 0.10 |
| Sum of minus signs | 0.08 | 0.40 | -0.05 | 0.59 | -0.14 | 0.13 |
| Number of plus signs | 0.05 | 0.57 | 0.08 | 0.37 | -0.11 | 0.22 |
| Sum of plus signs | 0.03 | 0.72 | 0.10 | 0.26 | -0.09 | 0.34 |
| Occupational Balance (total CIM score, 10 occupations) | 0.10 | 0.29 | 0.03 | 0.74 | -0.12 | 0.17 |
| Core occupational balance (CIM score, 5 occupations) | 0.13 | 0.14 | 0.06 | 0.54 | -0.15 | 0.11 |

Note. CIM= Cross Impact Matrix; SWB= Subjective Well-Being

Summary of Study 1

The CIM, regardless of how it was scored, has failed to correlate with well-being in this sample. Moreover, a look at the distribution of the values assigned in the matrix cells revealed that most of the participants tended to use the midpoint of the scale (or the value "0") while evaluating the impact between each pair of occupations. A zero score could mean that two occupations are "neutral" (neither have a positive or a negative impact on each other). However, it could also mean that a person chose to score "0", or neutral, because they believed that any negative impact is cancelled by any positive impact. Thus,

it seems less informative to measure the positive and negative impacts of two occupations simultaneously.

At the same time we encountered this methodological issue, Riediger (Riediger, 2007) suggested that interference and facilitation between goals (or occupations) are not opposite poles on a single dimension as it is possible for one occupation to facilitate another while at the same time the occupations can interfere with each other. Consider, for example, a person with two occupations: *playing cards with colleagues* and *writing a business proposal*. It could be that playing cards interferes with the business project in terms of time constraints (for instance, time that is spent playing cards cannot be spent on working on the proposal). On the other hand, playing cards might facilitate the business proposal project as the card game provides a context where professional knowledge and ideas can be exchanged. In that sense, Riediger (Riediger, 2007) distinguished between two assessment strategies while looking at the interaction among occupations: a bipolar strategy, which measures positive and negative impacts on the same scale (such as the CIM), and a unipolar strategy, which measures each of the factors with a separate scale. The former strategy considers occupational balance as a one dimensional concept whereas the latter considers it a two dimensional concept.

As stated earlier, studies that used a bipolar method (in order to examine the interaction among occupations) did not yield consistent results particularly when attempting to explain well-being. Riediger (2007) notes that the CIM failed to fully capture the nature of the relationship/interaction among one's occupations due to the measurement strategy. In other words, does occupational balance, defined as a one dimensional concept and measured by one bipolar scale (where conflict and facilitation are two opposites ends on one scale), explain well-being? The first study suggests the answer is no, which led us to conduct an additional study.

Occupational Balance as a two dimensional concept

Riediger and Freund (2004) found that interference and not facilitation among occupations is related to life satisfaction, suggesting that occupational balance should be measured as two distinct dimensions rather than with a bipolar scale, as we did in study 1.

Additionally, they used factor analysis and repeatedly found a two factor solution for occupational balance: facilitation and interference, with low correlation between these two factors (Riediger & Freund, 2004; Riediger Freund, & Baltes, 2005). They concluded that these two dimensions should be measured separately using two separate unipolar scales. They developed and validated an instrument called the *Inter-goal Relations Questionnaire* (IRQ) (Riediger & Freund, 2004). Their findings in conjunction with our findings in study 1 encouraged us to repeat our study using the same methodology except for substituting the IRQ for measuring occupational balance.

The purpose of the second pilot study was to examine whether there is a correlation between occupational balance among core occupations and SWB when measuring occupational balance as a two dimensional concept (using two distinct unipolar scales).

Study 2 – a pilot study

Method

Participants

Working adults were recruited to this study according to the same inclusion and exclusion criteria used in study 1, using a convenience sampling method.

Measures and Procedure

Data were collected in the same way described in study 1 except for replacing the CIM with the IRQ, the *Inter-goal Relations Questionnaire*. This questionnaire measured the level of conflict (or interference) and facilitation between occupations as two distinct and independent components. The two scores reflected the individual's level of occupational balance. Unlike the CIM's instructions, the IRQ asked the participant to select four personal goals that they considered as core occupations. Level of conflict was rated in terms of time, energy and financial constraints (i.e., *How often can it happen that, because of the pursuit of occupation A, you do not invest as much time/energy/money into occupation B as you would like?*); and in terms of incompatibility between occupations (i.e., *How often can it happen that you do something in the pursuit of occupation A that is incompatible with occupation B?*). The participants were asked to compare each pair of

occupations according to each interference item using a 5-point scale. The generated score was the average of the values rated for all the conflict items and ranged from 1 (*minimum interference among occupations*) to 5 (*maximum interference among occupations*). Level of facilitation was measured in terms of mutual benefit and promotion between two occupations (i.e., *How often can it happen that you do something in the pursuit of occupation A that is simultaneously beneficial for occupation B?*) Another separate score was generated by calculating the mean of the facilitation related items, ranging from 1 (*minimum facilitation among occupations*) to 5 (*maximum facilitation among occupations*). The IRQ has demonstrated validity and reliability preliminarily in studies conducted by its creators (Riediger & Freund, 2004).

Data analysis

The analysis was conducted as described in Study 1, except that this time a Pearson correlation was performed.

Results

Participants were 24 adults (50% men), 30-60 years old (mean=42.7, SD=9.7). Seventy-nine percent were living with a partner and 66% of all participants had children. The participants' mean working hours per week was 37 (SD= 14.6), and mean years of education was 16.4 (SD=2.4).

The level of conflict measured by the IRQ had a moderate negative correlation with life satisfaction, indicating that participants who perceived their occupations to be in a state of conflict tended to report lower levels of life satisfaction (see Table 2.3). Level of conflict among occupations explained approximately 25% of the variance in life satisfaction. However, the level of facilitation among occupations was not significantly correlated with life satisfaction (see Table 2.3), or with conflict ($r=-0.08$, $p=0.72$). Neither interference nor facilitation among occupations was associated with the affective components of well-being: positive and negative affects.

Table 2.3 Pearson correlation between interference, facilitation and SWB (n=24)

| | Subjective Well-Being | | | | | |
|--------------|-----------------------|----------|-----------------|----------|-----------------|----------|
| | Life Satisfaction | | Positive Affect | | Negative Affect | |
| | <i>r</i> | <i>p</i> | <i>r</i> | <i>p</i> | <i>r</i> | <i>p</i> |
| Interference | -0.50 | 0.01 | -0.04 | 0.85 | 0.33 | 0.12 |
| Facilitation | 0.19 | 0.38 | -0.03 | 0.89 | 0.21 | 0.32 |

Discussion

Similar to Riediger and Freund's (2004) findings, interference among occupations was negatively associated with life satisfaction. Moreover, facilitation was not correlated with life satisfaction and no significant correlation was found between the two dimensions of interference and facilitation, as measured by the IRQ. These findings support Riediger and Freund's (2004) claim that interference and facilitation are two distinct and independent factors that relate differently to well-being.

We expected that the affective component of well-being would be significantly associated with levels of interference among occupations (i.e., occupational imbalance). Though not statistically significant, the tendency between negative affect and interference was as expected, and it would be helpful to see if this trend was confirmed with larger and more diverse samples.

One of the questions raised in the literature was whether the social-ecological notion of occupational balance, operationally defined as a one dimensional concept measured with a bipolar scale anchored by conflict and harmony at opposing ends, can explain well-being. The results from Study 1 suggest the answer is no, even when looking at balance among one's core occupations as suggested by Christiansen et al. (1999). Indeed, results from Study 2 provide initial support for the claim that balance might be measured as a two dimensional concept, where harmony and conflict are measured separately using a unipolar scale. Further investigation of ways to measure occupational balance needs to consider this issue of bipolar versus two distinct dimensions.

The IRQ might serve as a potential tool for capturing one layer of the complexity of the concept of occupational balance. However, as Study 2 was designed as a pilot study, further studies are needed. First, the generalizability of the findings presented here is limited due to the small sample size. Second, as a cross-sectional design, no cause and

effect claim can be made. Therefore, future studies might consider a repeated measures design in order to evaluate occupational balance longitudinally or capture the effect of a balance-oriented intervention on well-being. These studies might consider focusing on conflict (i.e., interference), rather than harmony (i.e., facilitation) in their study plan, since it was found to be significant in our study. At the same time these studies might consider addressing the cognitive aspect of well-being (life satisfaction) as their outcome measure rather than the affective components (positive and negative affect) since it was found to be related to occupational imbalance in this study.

While trying to explain well-being, one might bear in mind that other factors are involved such as personality (Diener, Suh, Lucas, & Smith, 1999). Additional mediating factors such as the characteristics of one's occupations may influence the strength of the association observed between occupational balance and well-being. For example, one might assume that occupations that evoke stress and difficulty for the doer might create more conflict. Future studies might take into account the nature of the occupations in which one is engaged, and thus balancing.

It is important to note that we have examined only one aspect of balance among many others that can be found in the literature. Thus, systematic research that focuses on the complexity of the concept of occupational balance is needed. The next step might be an attempt to find congruency among the theoretical definitions and the operational ones. Using a mixed-method approach where qualitative data gathering contributes to the theoretical definition of the concept and quantitative approaches confirm that definition may be helpful to clarifying the construct. Finally, future studies might consider groups that are at risk to develop occupational imbalance (e.g., people with disabilities, the elderly, retirees, sub-cultures, minorities, people who live in areas of political conflict). In summary, further knowledge in the area of occupational balance and well-being would contribute a great deal to those who aim to promote health for their clients. This knowledge is particularly salient to occupational therapists as their domain involves redesigning their clients' array of occupations in a balanced and satisfactory way.

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Chapter 3 – A Note on the Dimensionality of Occupational Imbalance (Manuscript 2)²

Introduction

One of the ways to view the concept of occupational balance lies in the interrelations between one's occupation where facilitation or harmony among occupations denotes a balanced state and conflict or interference among them denote lack of balance or an imbalance state (manuscript 1). The term occupation refers to everyday life activities which are goal-directed, have meaning for the individual, and are culturally relevant (Law et al., 1996). Occupations are conceptually similar with other configurations of *actions* or *doing* such as personal projects (Palys & Little, 1983) and personal goals (Riediger & Freund, 2004) (for further explanation see manuscript 1). In fact, these configurations of actions are empirically comparable (Riediger, 2007). Moreover, studies show that participants come up with similar phrasings and outcomes when they are asked to list projects or goals (Omodei & Wearing, 1990). In this paper, for the sake of clarity, the term occupation will be used to account for personal projects as well as for personal goals.

It has been shown that occupational balance, measured by the rated impact of the occupations on each other, is a two-dimensional concept: facilitation and interference (Riediger & Freund, 2004; Riediger, Freund, & Baltes, 2005). These two dimensions are distinct and can co-exist. In fact, facilitation and interference were found to be weakly correlated to not correlated at all to each other and were related to well-being differently where interference among occupations, which represents occupational imbalance, was associated with well-being but facilitation was not (Riediger & Freund, 2004; Riediger, 2007). Hence, researchers who are interested in explaining well-being by occupational

² A version of this chapter will be submitted for publication. Anaby, D., Jarus, T. and Zumbo, B. A Note on the Dimensionality of Occupational Imbalance.

balance should perhaps pay closer attention to interference among occupations (occupational imbalance) rather than facilitation.

Riediger and Freund (2004) have developed the Inter-goal Relations Questionnaire (IRQ) in order to measure the interrelation among one's occupations using a unipolar scale for each dimension. The IRQ is a fairly new questionnaire developed in Germany and has an English version as well. The IRQ was used in several studies in Germany among older adults and younger adults (Riediger & Freund, 2004; Riediger et al., 2005). This study examines the psychometric properties of the IRQ.

Based on previous findings where interference among occupations (imbalance), as opposed to facilitation, was found to be related to well-being, this study explores the factorial structure of occupational imbalance measured by the level of interference among occupations. More specifically, we hypothesize that occupational imbalance is a single factor (unidimensional) concept.

Method

Participants

The cross-sectional study included a convenience sample of working adults living in Israel. A snowball sampling method was used to recruit participants according to the following criteria: (a) aged 27 to 60 years (b) have obtained a minimum of 10 years of education (c) employed for at least 20 hours a week and for a minimum of two years, and (d) be without any physical or emotional disabilities. Shift workers were excluded from the study as their working style might affect their occupational balance.

Measurements

The PPA's Eliciting Project Lists (Little, 1984) was used to generate a list of 10 occupations individuals were engaged in currently (see Appendix 2 Module 1).

Occupational imbalance was measured by the Interference scale of The Inter-goal Relations Questionnaire (IRQ). Level of imbalance was rated in terms of time, energy and financial constrains (*i.e.*, *How often can it happen that, because of the pursuit of occupation A, you do not invest as much time/energy/money into occupation B as you*

would like?); and in terms of incompatibility between occupations (*i.e.*, *How often can it happen that you do something in the pursuit of occupation A that is incompatible with occupation B?*). The participants were asked to compare each pair of occupations according to each of the four items using a 5-point scale. The generated score was the average of the values rated for all the items and ranged from 1 (*minimum interference among occupations*) to 5 (*maximum interference among occupations*). The IRQ's internal consistency and construct validity has been previously demonstrated (Riediger & Freund, 2004). The English version of the IRQ was translated to Hebrew via the translation-back translation procedure.

The latent variable of Occupational imbalance (interference among occupations) accounted for four indicators derived from the IRQ sub-scores (12 items for each): money, energy, time and incompatibility. Each indicator was an average score of the relevant 12 values rated on a 5-point scale which ranged from 1 (*minimum interference among occupations*) to 5 (*maximum interference among occupations*).

Demographic variables were collected using a demographic questionnaire in which three indicators of socio-economic status (SES) were assessed: 1) income 2) education 3) household density. The last indicator addresses population density inside the housing unit in terms of person per room (Lawrence, 2006). A ratio between number of people living in the household and number of rooms was calculated. Lower ratios indicated lower levels of density and higher levels of SES.

Procedure

Data were collected during an individual meeting that took place in a quiet setting chosen by the participants. After signing a consent form, participants completed self-administered questionnaires which were set in a random order.

This study, approved by the Behavioural Research Ethics Board of Tel Aviv University, was part of a larger study investigating well-being of working adults who completed a long battery of questionnaires. We used part of the data that was collected to answer our research question. First, the participants were asked to write down 10 current occupations they were engaged in using the PPA's Eliciting Project Lists. Then the

participants were asked to select four occupations from their list that they considered as core occupations. Core occupations were defined to the participants as occupations that were central to them, those that were most resistant to change, most extensively connected with other occupations, and intrinsically valued such that without these occupations, the meaning of their life would be compromised. Finally, using the Inter-goal Relations Questionnaire (IRQ), participants copied their selected four core occupations to the IRQ matrix and the evaluation of the level of imbalance among these occupations took place.

Based on previous studies with the IRQ (Riediger & Freund, 2004; Riediger et al., 2005; manuscript 1) we used only the section of the IRQ that assessed level of imbalance among occupations (i.e., the interference sub-scale).

Data analysis

Descriptive analysis was performed to characterize the sample. Confirmatory factor analysis was conducted to examine whether occupational imbalance was a single factor construct via EQS 6 (Bentler, 1995) where maximum likelihood method was selected. Based on Hu and Bentler's (1999) recommendation, a combination of two indices of fit was considered to determine whether the model fit the data: Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). The cutoff criteria/values for accepting the model were $CFI \geq .95$, $RMSEA < .08$ (Hu & Bentler, 1999). Parameter estimates were also examined to detect instances of irregular values such as unexpected signs or extreme values. Squared multiple correlations were used to evaluate the variance accounted for each indicator (i.e., item).

Results and conclusions

Sample characteristics

The demographic analysis of the 288 participants indicated that 39% were men, and that the mean age of the sample was 38.6 (SD=9.1). Eighty percent of the participants were married/living with a partner and 70% had children. Participants had 15.7 (SD=2.5) years

of education. Forty-seven percent of the participants were above the average of the Israeli income and their household density (number of people per room) ranged from 0.2 to 2 (mean=0.83, SD=0.29).

The majority of the sample (68%) was located in urban areas, 20% lived in sub-urban areas and the remaining participants (12%) lived in rural areas. Participants' overall mean working hours per week was 43.9 (SD= 12.1); most were professionals (58%) (e.g., engineers,), some were associated professionals (17%) (e.g., computer technicians); 11% were clerks; and the remainder (14%) held jobs classified in the basic range (e.g., transit operators).

The construct of occupational imbalance

Indices of fit confirmed a one factor solution (CFI=0.996; RMSEA=0.061). As shown in Table 3.1, the *money* indicator had the relatively lowest factor loading ($\lambda = 0.25$) with the lowest contribution to the model ($R^2=0.064$) whereas the *time* indicator had the highest loading ($\lambda = 0.96$) with the greatest contribution to the model ($R^2=0.94$). In addition, the inter-correlation matrix indicated low correlations between the 'money' item and the rest of the items (see Table 3.2). Cronbach's α of the whole scale was 0.78.

Table 3.1 Standardized solution of the construct of occupational imbalance (n=288)

| | λ | δ | R^2 |
|-------------------------------|-----------|----------|-------|
| Occupational Imbalance | | | |
| Indicator 1 (money) | 0.25 | 0.96 | 0.064 |
| Indicator 2 (energy) | 0.85 | 0.52 | 0.722 |
| Indicator 3 (time) | 0.96 | 0.25 | 0.935 |
| Indicator 4 (incompatibility) | 0.66 | 0.75 | 0.431 |

Note. λ = factor loading, δ = error

Table 3.2 Inter-correlation matrix of the IRQ items (n=288)

| Items | money | time | energy | incompatibility |
|-----------------|-------|-------|--------|-----------------|
| Money | 1 | .25** | .28** | .15* |
| Time | | 1 | .81** | .64** |
| Energy | | | 1 | .54** |
| incompatibility | | | | 1 |

* $p < 0.05$, ** $p < 0.01$

This study confirmed a single-dimensional structure of occupational imbalance, measured by level of interference among occupations, which is in line with previous studies (Riediger & Freund, 2004; Riediger et al., 2005). In addition, the scale's internal consistency is fairly good (Cronbach's $\alpha=.78$) based on Clark and Watson's (1995) criteria, yet weaker than Riediger and Freund's (2004) findings (Cronbach's $\alpha=.94$).

Interestingly one item, money, displayed the lowest mean (1.35), the least variability, the highest Kurtosis (3.2) (Table 3.3), the smallest loading (Table 3.1) and the lowest correlations with the other items (see Table 3.2). One explanation might be embedded in our sample characteristics. Nearly half of our participants reported above average income, low levels of house density and relatively high levels of education. Hence their SES is relatively high. It could be that the 'money' item did not play a significant role due to participants' financial resources. At the same time it could be that people do not choose to be involved in occupations that they cannot afford. These assumptions need further study.

Table 3.3 Descriptive statistics of the IRQ items (n=288)

| Variable | min | max | mean | SD | Skewness | Kurtosis | 50-75 percentile |
|-------------------------|-----|------|------|-----|----------|----------|------------------|
| Imbalance (total score) | 1 | 3.67 | 1.98 | .49 | .40 | .16 | 1.97-2.29 |
| Money | 1 | 3.67 | 1.35 | .44 | .17 | 3.20 | 1.2-1.5 |
| Time | 1 | 4.50 | 2.18 | .61 | .52 | .61 | 2.1-2.6 |
| Energy | 1 | 4.60 | 2.25 | .66 | .50 | .66 | 2.2-2.7 |
| incompatibility | 1 | 4.80 | 2.20 | .78 | .60 | .78 | 2.1-2.7 |

It is important to note that this study was based on a convenience sample, therefore its generalizability is limited. Further studies are needed to confirm its findings in different populations across the life span. Given all that, however, our findings contribute to the construct validity of the interference dimension of the IRQ; its reliability and thus its utilization in the Israeli context.

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Chapter 4 – The Hebrew Version of the SWLS (manuscript 3)³

Introduction

The notion of Subjective Well-Being (SWB) has received a great deal of attention across cultures particularly with the emergence of the positive psychology movement (Diener, Suh, Lucas, & Smith, 1999). Rather than concentrating on repairing damage within a diseased model of human functioning, the positive psychology movement focuses on what makes life worth living and how people can thrive and flourish (Seligman & Csikszentmihalyi, 2000). Moreover, well-being has become one of the outcome measures of a rehabilitation intervention recognized by the World Health Organization (1993). The concept of SWB incorporates two main aspects: an affective component, which refers to one's experience in pleasant and unpleasant affects, and a cognitive component which addresses one's judgment of their life as a whole which is exhibited by life satisfaction. The Satisfaction with Life Scale (SWLS) is a well-established tool for measuring the cognitive component of SWB which enables individuals to judge their life satisfaction based on their own criteria. The items in the scale are global (e.g., *in most ways my life is close to my ideal*) and thus allow individuals to weigh domains of their life based on their own values rather than a list of domains imposed by a researcher. Thereby, it reflects the idiosyncracies of life for each individual and captures one's well-being more accurately (Diener, 1994). Additionally, the scale is quick and easy to administer in different age groups (Pavot & Diener, 1993).

The existing data suggest that the SWLS has potential as a cross-cultural index of life satisfaction (Pavot & Diener, 1993). The SWLS has been adapted to various national contexts including Brazil (Gouveia, Milfont, da Fonseca, & Pecanha de Miranda Coelho, 2009), Malaysia (Swami & Chamorro-Premuzic, in press), Lebanon (Ayyash-Abdo & Alamuddin, 2007), Netherlands (Arrindell, Meeuwesen, & Huyse, 1991), Norway (Vitterso, Biswas-Diener, & Diener, 2005), Hong Kong (Sachs, 2003), Spain (Atienza, Pons, Balaguer, & Garcia-Merita, 2000), Sweden (Hultell & Gustavsson, 2008), Portugal

³ A version of this chapter will be submitted for publication. Anaby, D., Jarus, T. and Bruno Z. Psychometric Evaluation of the Hebrew language version of the Satisfaction With Life Scale.

(Neto, 1993), the Czech Republic (Lewis, Shevlin, Smékal, & Dorahy, 1999) and Taiwan (Wu & Yao, 2006). However, to date a Hebrew version of the SWLS, as well as a psychometric evaluation of this cross-culturally adapted measure has not been found in the literature. Therefore there is a need for a systematic evaluation of the concept of SWB in the Israeli context.

The purpose of this study is to describe the process of developing the Hebrew version of the SWLS and to examine its validity and reliability. Focusing on the scale validity of the SWLS, several studies using factor analysis have demonstrated a unidimensional structure for the SWLS among different cultures and various populations (e.g., medical outpatients in the Netherlands (Arrindell et al., 1991), people with schizophrenia in Taiwan (Wu & Wu, 2008)). In addition, a number of studies strengthened the scale's construct validity by examining its relation to other measures of well-being. For example the SWLS scale score was positively associated with quality of life (Wu & Wu, 2008), with positive affect (Smead, 1991) and general health (Arrindell et al., 1991); and an expected negative association with negative affect was demonstrated (Larsen, Diener, & Emmons, 1985; Smead, 1991). In addition, there is a vast support for the scale's internal consistency as well as its stability (e.g., Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993; Vassar, 2008). To that end, our hypotheses are as follows: The SWLS 1) has a one dimensional structure; 2) is associated with measures of affect and health; and 3) has sufficient internal consistency.

Method

Participants and Procedure

The current study was part of a larger study of well-being conducted in Israel during Sept 2004 to June 2006. This study explored well-being from an occupational perspective and included several questionnaires that measured aspects of well-being. The present study used data related to well-being.

This study included a convenience sample of working adults living in Israel. The inclusion criteria included participants who (a) were between the ages of 27 to 60 (b) were working at least 20 hours a week and for a minimum of two years at the same job,

and (c) had a minimum of 10 years of education. Shift workers or people with physical or emotional disabilities were excluded from the study as their conditions might affect well-being.

A snowball sampling method was used to recruit participants. Data were collected by trained occupational therapy students during an individual meeting. After signing a consent form the participants completed a battery of questionnaires set in a randomized order. Finally, for purposes of validity testing, the SWLS was also completed by the participant's significant other while not in the presence of the participant for only part of the sample (60%). The study was approved by the Behavioural Research Ethics Board of Tel Aviv University (see Appendix 1).

Our sample included 487 adults (39% male) with a mean age of 39 (SD=9.5). Seventy-seven percent of the participants were living with a partner and 67% had children. Participants had 15.5 (SD=2.5) years of education, their household density (number of people per room) ranged from 0.25 to 3 (mean=0.87, SD=0.34), and 46% of the participants' income was above the mean Israeli income. The majority of the sample (72%) was located in urban areas, 16% lived in sub-urban areas and the remaining participants (12%) lived in rural areas. Participants' overall mean working hours per week was 42 (SD= 12.8); most of the participants were professionals (59%) (e.g., engineers.), some were associated professionals (16%) (e.g., computer technicians); 11% were clerks; and the remainder (14%) held jobs classified in the basic range (e.g., transit operators).

Instruments

The SWLS (Diener et al., 1985) assessed the cognitive component of SWB where the individual was asked to judge his or her satisfaction with life as a whole. It contained five statements in which participants were asked to rate their level of agreement on a 7-point scale. The final score was calculated by the sum of the assigned values for each statement and ranged from 7 (*minimal life satisfaction*) to 35 (*maximum life satisfaction*). Evidence of the SWLS' reliability and validity has been reported in several studies (Pavot & Diener, 1993; Vassar, 2008). The SWLS was translated to Hebrew for the sake of this study using a translation-back translation method.

The Positive and Negative Affect Scales (PANAS) (Watson, Clark, & Tellegen, 1988) assessed the affective component of subjective well-being and contained two scales. Each scale included 10 items that referred to two dimensions of mood: positive and negative affect. The 20 items were set randomly and participants were asked to rate how frequently they experienced each mood item on a 5-point scale. By summing the assigned values, two scores were generated, one for each scale, ranging from 10 (*minimal negative/positive affect*) to 50 (*maximum negative/positive affect*). The validity and reliability of PANAS has been demonstrated (Watson et al., 1988). The PANAS was translated to Hebrew for the sake of this study using a translation-back translation method.

Self Rated Health (SRH) scale assessed the individual subjective perspective of his or her current general health condition. It included one item set as a Visual Analog Scale (VAS) (Paul-Dauphin, Guillemin, Virion, & Briancon, 1999), a plain vertical line, 100 mm in length whose ends represented opposite aspects of an individual's health condition (*poor health condition to excellent*). The participant was asked to mark his or her level of health along the line using a pencil. Scores ranged from 0 (*poor*) to 10 (*excellent*), based on the distance in centimeters, of the mark from the zero point. This scale was found valid across ages and suitable in epidemiologic studies and health surveys among different populations (Miilunpalo, Vuori, Oja, Pasanen, & Urponen, 1997). The SRH scale was already translated to Hebrew and was found appropriate to the Israeli context (Carmel, Baron-Epel, & Shemy, 2007)

Demographic variables were collected using a demographic questionnaire in which three indicators of socio-economic status (SES) were assessed: 1) income 2) education, and 3) household density. The last indicator addressed population density inside the housing unit in terms of person per room (Lawrence, 2006). A ratio between number of people living in the household and number of rooms was calculated. Lower ratios indicated lower levels of density and higher levels of SES.

Translation of the SWLS

The SWLS was adapted to the Hebrew language using translation- back translation method via the following procedure: the SWLS was translated separately by two native Hebrew speakers who were also fluent in English. They were asked to report specific items or concepts found to be difficult to translate. Both found the translation straightforward except for item 2 (*the conditions of my life are excellent*) which needed carefully selected words. Then, back-translation of the translated version was done by two different native English speakers who were also fluent in Hebrew. The back-translated version was similar to the original so no further changes were needed.

In the next stage, 10 occupational therapy students fluent in Hebrew and English reviewed the final version of the scale as a group, to verify clarity of item wording, while supervised by the investigators. No words or phrases were identified as unclear. Finally, a pilot study was conducted, in which 10 participants completed the translated version and provided feedback on clarity of all items. Again, no specific problems were reported. The final translated version is shown in Figure 4.1.

Data analysis

A Cronbach's alpha coefficient was calculated to examine the internal consistency of the translated version. The scale's construct validity was measured using two methods: 1) Pearson correlation coefficients between the SWLS scores and the PANAS, SRH scores, and SWLS scores rated by the participant's significant other; and 2) Confirmatory Factor Analysis (CFA) for examining the factor structure of the scale. The CFA of the polychoric correlation matrix was performed via Structural Equation Modeling (SEM) where robust maximum likelihood method was selected using EQS 6 (Bentler, 1985; Bentler, 1995). The following indices of fit were considered to determine whether the single factor model fit the data: Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). The cutoff criteria/values for accepting the model were $CFI \geq .95$ and $RMSEA < .08$ (Hu & Bentler, 1999). In fact, Hu & Bentler (1999) state that if a combinational rule indicates that the model fits the data well, there is a greater confidence about the goodness of fit of the model. Parameter estimates were also examined to see if there were irregular values such as unexpected signs or extreme

values. Squared multiple correlations were used to evaluate the variance accounted for each indicator (item).

Results and conclusions

Reliability

Results of the item analysis of the SWLS are shown in Table 4.1. Relatively lower corrected item-total correlations were found in item 4 and 5. Cronbach's α of the whole scale was 0.86 which demonstrates its internal consistency.

Table 4.1 Item analysis for the SWLS (n=487)

| | Mean | SD | Skewness | Kurtosis | Corrected item-total correlation |
|-------------|-------|------|----------|----------|----------------------------------|
| Item1 | 4.89 | 1.45 | -0.67 | -0.48 | 0.69 |
| Item2 | 4.96 | 1.43 | -0.82 | -0.003 | 0.73 |
| Item3 | 5.21 | 1.36 | -1.04 | 0.54 | 0.77 |
| Item4 | 5.95 | 1.44 | -0.73 | -0.207 | 0.64 |
| Item5 | 4.16 | 1.66 | -0.17 | -1.08 | 0.58 |
| Total score | 24.17 | 5.9 | -0.63 | -0.22 | |

Note. SWLS= Satisfaction With Life Scale

Construct Validity of the SWLS

The CFA results of a single-factor solution/structure for the SWLS are summarized in Table 4.2. The CFA involved estimating 10 parameters and 5 degrees of freedom. Indices of fit indicated that the model fit the data well (CFI=0.996, RMSEA=0.053).

There was no irregularity in parameter values. The squared multiple correlations for the five indicators (items) ranged from 0.41 to 0.82 where the fifth item accounted for the least variance and the third item had the most contribution for the scale variance. This pattern of factor loading is consistent with recent findings suggesting that the fifth item often has the lowest factor loading in comparison with the other items (Gouveia et al., 2009; Slocum-Gori, Zumbo, Michalos, & Diener, in press).

The results of the combinational rule suggested by Hu & Bentler (1999) (CFI=0.996, RMSEA=0.053), while considering the simplicity of the model, strengthens our confidence in the goodness of fit of the model. Our results are in line with previous findings supporting a single-factor structure of the SWLS (Arrindell et al., 1991; Wu & Wu, 2008). It should be noted that when we repeated the analysis above, treating the

items as continuous (using a Pearson covariance matrix), as is often done in the SWLS literature, the conclusions of the CFA were the same.

Table 4.2 Standardized solution of the construct of well-being (n=487)

| | Std. estimates | R ² |
|----------------|----------------|----------------|
| Factor loading | | |
| λ_1 | 0.77 | 0.59 |
| λ_2 | 0.85 | 0.72 |
| λ_3 | 0.90 | 0.82 |
| λ_4 | 0.67 | 0.45 |
| λ_5 | 0.64 | 0.41 |

Note. λ = factor loading

Pearson correlations indicated the SWLS is significantly correlated with all of the following measures of well-being: positive affect, negative affect, health perception, and life satisfaction perceived by one's significant other (see Table 4.3).

Table 4.3 Pearson correlation between measures of well-being and SWLS score

| | N | r | p |
|---------------------------|-----|----------|-------|
| Measures | | | |
| Positive affect | 474 | 0.274** | 0.001 |
| Negative affect | 474 | -0.302** | 0.001 |
| Self-Rated health | 474 | 0.251** | 0.001 |
| SWLS by significant other | 286 | 0.59** | 0.001 |

* $p < 0.05$, ** $p < 0.01$

As expected, SWLS scores were negatively correlated with negative affect and positively correlated with positive affect and health. Interestingly, life satisfaction rated by the participants themselves had a strong correlation with SWLS scores evaluated by the participant's significant other. As these findings are consistent with previous reports (Larsen et al., 1985; Pavot & Diener, 1993; Smead, 1991), as well as with Diener's (1984) theory of well-being, they strengthen the validity of the Hebrew translated version.

One of the limitations of this study is that it is based on a convenience sample that might not necessarily be representative of the Israeli population. However, the mean life satisfaction score in our sample (24.17) falls within the normative data of non-clinical populations (Pavot & Diener, 1993).

In conclusion, our results indicate the Hebrew version of the SWLS is a valid and reliable tool. Its single factor structure was confirmed and its internal consistency values were satisfactory. Therefore, this version can be used in the Israeli context.

Figure 4.1 The Hebrew version of the SWLS

הוראות. בהמשך תמצא חמש הצהרות. נא דרג את מידת הסכמתך מ-1 עד 7.
אנא שמור על פתיחות ויושר בתשובותיך.

7 = מסכים מאוד

6 = מסכים

5 = מסכים קלות

4 = איני מתנגד ואיני מסכים

3 = לא מסכים קלות

2 = לא מסכים

1 = מאוד לא מסכים

_____ ברוב האופנים חיי קרובים לאידיאל שלי

_____ המצב של חיי מצוין

_____ אני שבע רצון מחיי

_____ עד כה השגתי את הדברים החשובים שאני רוצה בחיים

_____ אם יכולתי לחיות את חיי שוב לא הייתי משנה כמעט דבר

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Chapter 5 – The Role of Occupational Characteristics and Occupational Imbalance in Explaining Well-being (Manuscript 4)⁴

Introduction

Subjective Well-Being (SWB) refers to the way individuals perceive their life as a whole (Diener, 1984). This concept of SWB is gaining attention as an important outcome measure to assess for treatment efficacy in rehabilitation clinical studies (AOTA, 2002; WHO, 2001). In the area of psychology, in particular personality research, it has been suggested that a key factor for explaining SWB lies in the nature of one's everyday life activities (or goal-directed pursuits) and in finding balance in these activities (Little, 1983; Little & Chambers, 2004). Personality has been recognized as another important factor that affects not only well-being (Diener, Suh, Lucas, & Smith, 1999) but also influences the way people choose their daily activities, structure and perceive them (Furnham, 1981; Little, Lecci, & Watkinson, 1992). The notion of daily activities and their effect on well-being is studied in other fields such as occupational therapy and occupational science (Yerxa et al., 1989). Although the terminology across fields is different it represents similar concepts. In occupational therapy and occupational science, occupation is defined as a group of goal-directed activities which are attributed to any life domain, not necessarily work, such as leisure or self care (Law et al., 1996). Similar is the concept of balance in occupations which is closely related to other terms such as work-life balance, yet it is different. Occupational balance addresses all life domains not necessarily just work and looks at the way individuals find balance among different kinds of activities (e.g., learning, playing, socializing etc.). Yet there is a lack of evidence on what constitutes a balanced state among occupations, how it is associated with the characteristics of those occupations and one's personality traits, and in turn how it is associated with well-being.

⁴ A version of this chapter will be submitted for publication. Anaby, D., Jarus, T., Backman C. and Zumbo, B. The Role of Occupational Characteristics and Occupational Imbalance in Explaining Well-Being.

It is important to develop integrated theoretical models to better understand the role of occupation and occupational balance in explaining well-being; at the same time, these models need to be empirically tested in order to contribute substantially to the study of occupation. Furthermore, developing theoretical models which are interdisciplinary in nature might improve our understanding of human behavior, reflected in occupations, and its effect on well-being. Such models might guide various fields of practice that consider the *doing* aspect of their clients as a vehicle for promoting well-being (e.g., psychologists, recreational therapists, occupational therapists, vocational counselors among others). Thus, the purpose of this study is to propose a theoretical model based on knowledge from the research fields of personality, occupational therapy and occupational science, and to test it empirically using Structure Equation Modeling (SEM).

The literature was reviewed in order to articulate a conceptual model for empirical testing. Occupational balance, well-being, and related factors are defined based upon the theory they were derived from, and the review suggests how these concepts are related to each other. Subsequently, a proposed theoretical model is outlined to illustrate the study's hypothesis, presented in Figure 5.1.

Occupation - a potential construct in explaining well-being

Theoretical approaches in the area of psychology (Csikszentmihalyi & Hunter, 2003; Little, 1984) and occupational therapy (Meyer, 1977; Reilly, 1966; Yerxa et al., 1989) recognize the potential of daily life activities (or goal-directed pursuits) in expressing individual differences and explaining well-being. People's specific behavioral tendencies, which are reflected in daily life activities, have been termed by Little (1996) as Personal Action Construct (PAC) units. Examples of such units are: personal projects (Palys & Little, 1983); personal goals (Riediger, 2007) and occupations (Law et al., 1996). These PAC units can include, for example, *writing an article with Dr. Fox*, *making an album for my sister's 50th birthday*, or *getting a promotion to assistant manager*. In personality research, the term *personal project* is used to refer to interrelated sequences of actions intended to achieve some personal goal (Little, 1983) and naturally share common elements with the term personal goal (Little, 2007). In occupational therapy theory, the

term occupation is defined more broadly than typically understood and refers to groups of everyday life activities which are goal-directed, have meaning for the individual, and are familiar to his or her culture (Law et al., 1996). Thus, the term occupation is not necessarily limited to employment-related activities, but refers to any activity people engage in to occupy themselves in any life domain.

The concept of personal project exhibits the four elements common to definitions of occupation suggested by Christiansen & Baum (2005) as they are: (a) goal-directed (b) contextual (c) culturally identifiable and (d) have meaning to the doer. In fact, Persson, Erlandsson, Eklund and Iwarsson (2001) claim that when any given task is carried out it becomes an occupation as it is being interpreted and valued by the doer. Moreover, the concept of personal project is in line with the taxonomy of occupation in occupational therapy. This taxonomy includes *role* (e.g., a mother), *occupation* (e.g., organizing a birthday party for my daughter), *activity* (buying the cake ingredients) and *task* (e.g., heating the oven) (Polatajko et al., 2004; Townsend & Polatajko, 2007). Not only are these configurations of action units, (occupations, personal projects and personal goals) conceptually similar but they are also empirically comparable (Omodei & Wearing, 1990; Riediger, 2007). Thus, this paper will use *occupation* to represent both personal projects and personal goals, and the *Personal Project Analysis* as a method to study occupation.

Occupational characteristics and well-being (see Figure 5.1, path 5)

There is considerable theoretical support that occupation is a source of well-being and a mechanism for meeting intrinsic needs and interests (e.g., Christiansen & Baum, 2005; Law et al., 1996; Wilcock, 1998). Yet, knowledge about the *specific* characteristics of daily occupations that promote health and well-being is limited. Little (1984) developed a method for measuring people's reasons for pursuing projects or occupations labeled Personal Projects Analysis (PPA). This method frames the way individuals perceive their personal projects or occupations in terms of five characteristics: meaning, structure, community, efficacy and stress. *Meaning* refers to the way the individual perceives his or her occupations as rewarding, valuable and worthwhile. The second characteristic, *structure*, refers to the sense that one's occupations are organized and under control.

Community refers to the perception that others view one's occupations as important, and *efficacy* relates to the perception that one will be successful in completing occupations. The last characteristic, *stress*, reflects aspects of difficulty, challenge and stress due to engagement in occupations. Little (Little, 1984) suggested that appraising and evaluating occupations through these five characteristics explains an individual's subjective well-being (SWB).

Several studies indicate a relationship between occupational characteristics and well-being. For example, the research literature confirms the assumption that occupations with meaning to the individual have a positive association with SWB (e.g., Clark et al., 1997; Palys & Little, 1983). Additionally, McGregor and Little (1998) found that enjoyable, supported and efficient occupations were associated with a higher level of well-being, whereas Lecci, Karoly, Briggs and Kuhn (1994) showed that persons scoring high on measures of depression rate their occupations as more stressful and difficult. Similarly, other studies have shown that participants whose occupations are characterized by a high level of efficacy, control, and meaning, and by low levels of stress reported a higher level of well-being (Christiansen, Backman, Little, & Nguyen, 1999; Christiansen, 2000; McGregor & Little, 1998; Yetim, 1993). Studies showed that occupations that are supported and valued by others (the community characteristic) have a positive effect on well-being (Salmela-Aro & Little, 2007; Wallenius, 1999; Wenzel, 2000). Hence, there is considerable support, theoretically as well as empirically, for the relation between occupational characteristics and well-being.

Occupational balance and well-being (see Figure 5.1, path 4)

The literature in occupational therapy, in the very early stages of the profession's development, purported theoretical support for the tenet of occupational balance, suggesting that a balance among one's occupations promoted well-being and health (McColl, Law & Stewart, 1993; Meyer, 1977; Reilly, 1966). In fact, this notion has become increasingly prevalent in recent literature (e.g., Backman, 2004; Christiansen, 1996; Christiansen & Matuska, 2006; Håkansson, Dahlin-Ivanoff, & Sonn, 2006; Jonsson & Persson, 2006; Westhorp, 2003; Wilcock et al., 1997), yet it is somewhat a

contested concept with little consensus on how it is defined and best measured. This study views occupational balance from a socio-ecological perspective considering the personal and contextual influences under which people act. Occupational balance, according to this approach, focuses on the interaction among one's occupations where harmony or facilitation among them implies a state of balance, and conflict or interference among occupations suggests a lack of balance; both are based on personal perception (Christiansen, 1996).

Studies exploring the relationship between occupational balance and well-being by looking at the impact among occupations (level of conflict/interference and harmony/facilitation) using a bipolar scale have not yielded consistent results (Christiansen et al., 1999; Palys & Little, 1983; Wallenius, 2000; manuscript 1). Recently it has been shown that interference and facilitation among occupations are distinct dimensions that co-exist. In fact, they are differently related to well-being: interference, or occupational imbalance, demonstrates a statistically significant association with SWB, but facilitation, or occupational balance, does not (Riediger & Freund, 2004; Riediger, Freund, & Baltes, 2005; Riediger, 2007; manuscript 2). Therefore, this study will focus on the *interference* dimension of the concept which represents the level of imbalance among occupations.

Occupational characteristics, occupational imbalance and well-being (see Figure 5.1, path 3, 4 and 5)

One factor that might influence the relation between imbalance among occupations and well-being is related to the characteristics of these occupations. This influence is a result of the relation between occupational characteristics and occupational imbalance. For example, structured occupations (well-organized and in one's control, easier to manage) reduce one's sense of imbalance and therefore contribute to greater SWB. On the other hand, stressful occupations may lead to higher levels of imbalance as they are more complicated to manage, and therefore result in lower SWB. Indeed, the literature provides evidence for this relationship. In a study of people 18-64 years old, involvement

in occupations characterized by a low level of enjoyment and a high level of difficulty were associated with conflict (occupational imbalance) and low levels of life satisfaction (Palys & Little, 1983). Similarly, Hakansson, Dahlin-Ivanoff and Sonn (2006) found that engaging in meaningful occupations with a sense of control enabled people to achieve balance in everyday life. Therefore, in addition to the direct effect of occupational characteristics on well-being, the occupational characteristics might have an effect on well-being through their effect on occupational imbalance.

Personality and well-being and the relation to occupation (see Figure 5.1 paths 1, 2 and 5)

One of the most consistent parameters in its ability to explain SWB is personality traits (Diener et al., 1999). There are five main groups of personality traits that are generally accepted in the literature: extraversion, openness, neuroticism, agreeableness and conscientiousness (John & Srivastava, 1999). There is evidence that personality traits are stable and even inheritable (Diener et al., 1999). Studies show that well-being is mostly influenced by extraversion and neuroticism. Extraversion is related to positive affect and neuroticism is related to negative affect (DeNeve & Cooper, 1998; Diener et al., 1999; Watson & Clark, 1997).

Beyond the relationship between personality and well-being it seems that personality affects the way people choose and perceive their occupations. Little, Lecci and Watkinson (1992) suggest that the five characteristics of personal projects (that is, occupations) are related to the five personality traits. For example, it was found that neuroticism is related to the occupational characteristics of stress, structure and meaning, while extraversion and conscientiousness was positively correlated with meaning, efficacy and community (Little et al., 1992). This provides empirical support for the relationship between personality and occupational characteristics. At the theoretical level, the socio-ecological model of personality proposed by Little (1999) positions PAC units (i.e., occupations) as mediators between one's disposition and well-being. Thus, well-being is influenced by occupational characteristics, which in turn is influenced by one's

personality traits. In other words, the relation between personality and well-being is mediated by one's occupational characteristics.

The present study

To summarize, this literature review identified two factors that mediate the effect of personality on well-being: occupational characteristics and occupational imbalance. It was found that occupational characteristics serve as mediators between personality and well-being. In addition, occupational imbalance serves as mediator between occupational characteristics and well-being. Hence, well-being is influenced by occupational imbalance, that is influenced by the characteristics of the occupations one engages in, which in turn is influenced by one's personality traits. The literature reviewed here provides the rationale for the hypothetical model presented in Figure 5.1.

Figure 5.1 The hypothetical model

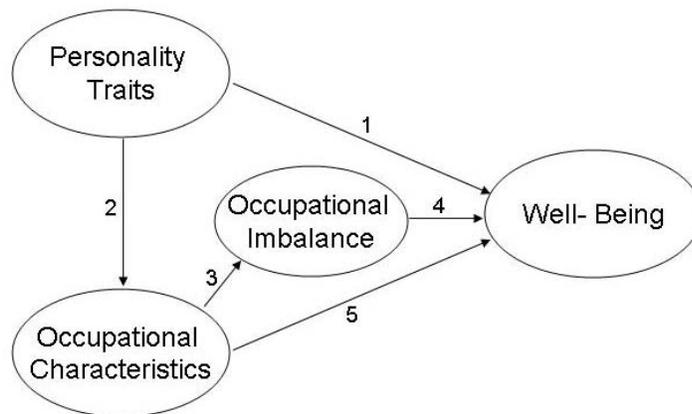


Figure 5.1 presents the structural relationship between personality, occupational characteristics, occupational imbalance and well-being. Our general hypothesis is that the proposed model will fit the data. Looking at Figure 5.1 from left to right we specifically hypothesize that: 1) Personality traits, occupational characteristics and occupational imbalance have a direct effect on well-being (see paths 1, 4 and 5); 2) Occupational characteristics serve as mediator between personality and well-being and (see paths 2 and

5) 3) Occupational imbalance serves as a mediator between occupational characteristics and well-being (see paths 3 and 4).

Method

Participants and Procedures

The present cross-sectional study included a convenience sample of 288 working adults, between the ages of 27-60 living in Israel. Participants needed to have a minimum of 10 years of education, be employed for at least 20 hours a week and for a minimum of two years, and be without any physical or emotional disabilities. Shift workers were excluded from the study as their working style might affect their occupational imbalance. A snowball sampling method was used to recruit participants. Data were collected during an individual meeting that took place in a quiet setting chosen by the participants. After signing a consent form, participants completed self-administered questionnaires which were set in random order. All the measurements were translated to the Hebrew language via translation-back translation method. The study was approved by the Behavioural Research Ethics Board of Tel Aviv University (see appendix 1).

Measures

Subjective Well-being (SWB)

This variable was operationally defined by the five-itemed Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985). This questionnaire assessed the cognitive perspective of SWB where the individual was asked to judge their satisfaction with life as a whole. It contained five statements in which participants were asked to rate their level of agreement on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Thus, each indicator score ranges from 1 to 7. A summed score was generated ranging from 7 (*minimal life satisfaction*) to 35 (*maximal life satisfaction*).

The scale has demonstrated adequate internal consistency (mean Cronbach's alpha across studies was 0.78 (Vassar, 2008)) and a two-month stability coefficient of 0.82 (Pavot &

Diener, 1993). Factor structure of the scale supported its validity confirming a single-factor solution (Arrindell, Meeuwesen, & Huyse, 1991; Pavot & Diener, 1993) and its construct validity was demonstrated with its association to other measures of well-being (Pavot & Diener, 1993). These findings were repeated while examining the Hebrew version of the scale (manuscript 3). In the present study its single-factor structure was verified using Confirmatory Factor Analysis (see result section) and Cronbach's alpha coefficient was 0.83.

Occupational characteristics were measured using the Personal Projects Analysis (PPA) (Little, 1984). This questionnaire examined the individual's perception of their own unique occupational system. Two of the PPA modules were used: the Eliciting Project Lists and the Rating Matrix (see Appendix 2). First, the individual was asked to list 10 current occupations, then rate those occupations on a matrix of 15 items using an 11-point scale for each item (e.g., *to what extent is this occupation important to you? Use 0 if the occupation has no importance at all and 10 if it's very important*). The 15 items clustered on 5 factors that represent the characteristics of occupation according to Little (1984): meaning (5 items: *enjoyment, identity, value, importance and absorption*), structure (3 items: *time adequacy, control, initiation*), community (2 items: *visibility, others' view*), efficacy (2 items: *progress, outcome*) and total stress (3 items: *difficulty, challenge, stress*). The mean of items comprised the score for each factor, ranging from 0 to 10. The PPA has demonstrated adequate criterion and construct validity (Christiansen et al., 1999; Little et al., 1992; Palys & Little, 1983); internal consistency (Cronbach's $\alpha=0.7$) and stability for up to two weeks (Backman, 2001; Little et al., 1992). In the present study the Cronbach's alpha coefficient for meaning was 0.86, structure 0.70, community 0.80, efficacy 0.65 and stress 0.64.

Occupational imbalance was operationally defined by four indicators that represent levels of interference among occupations in terms of money, time, energy and incompatibility. These indicators were derived from the Interference scale of the Inter-goal Relations Questionnaire (IRQ) (Riediger & Freund, 2004). Participants selected four occupations that they considered core occupations from those listed on the PPA. Level of

interference was rated in terms of time, energy and financial constraints (i.e., *How often can it happen that, because of the pursuit of occupation A, you do not invest as much time/energy/money into occupation B as you would like?*); and in terms of incompatibility between occupations (i.e., *How often can it happen that you do something in the pursuit of occupation A that is incompatible with occupation B?*). The participants were asked to compare each pair of occupations according to each of the four items using a 5-point scale ranging from 1 (*never/very rarely*) to 5 (*very often*). Means were calculated and scores ranged from 1 (*minimum interference among occupations*) to 5 (*maximum interference among occupations*). Thus, each indicator represented the mean of its 12 items ranging from 1 to 5. Construct validity of the interference scale was demonstrated among old and young adults indicating a one-factor solution as well as excellent internal consistency (Cronbach's $\alpha=.94$) (Riediger & Freund, 2004). The Hebrew version of the interference scale was validated as well (manuscripts 1 and 2). In this present study the Cronbach's alpha coefficient was 0.78 and a single-factor structure was confirmed (see result section).

Personality traits were measured using the Big Five Inventory (BFI) (John & Srivastava, 1999) that assessed five personality factors: neuroticism (8 items), extraversion (8 items), openness (10 items), agreeableness (9 items) and conscientiousness (9 items). Participants estimated their level of agreement with 44 items using a 5-point scale (*1=disagree strongly, 5=agree strongly*). Mean scores were calculated for each personality factor and ranged between 1 to 5. Internal consistency (0.83 on average) and stability as well as criterion validity against NEO-Five Factor Inventory and Trait Descriptive Adjectives were established (John & Srivastava, 1999). In the present study, the coefficient alpha for each factor was: neuroticism 0.81, extraversion 0.77, agreeableness 0.58, openness 0.56 and conscientiousness 0.74.

Demographic variables were collected using a demographic questionnaire where three indicators of socio-economic status (SES) were assessed: 1) income 2) education 3) household density. The last indicator addressed population density inside the housing unit in terms of person per room (Lawrence, 2006). A ratio between number of people living

in the household and number of rooms was calculated. Lower ratios indicated lower levels of density and higher levels of SES.

Data analysis

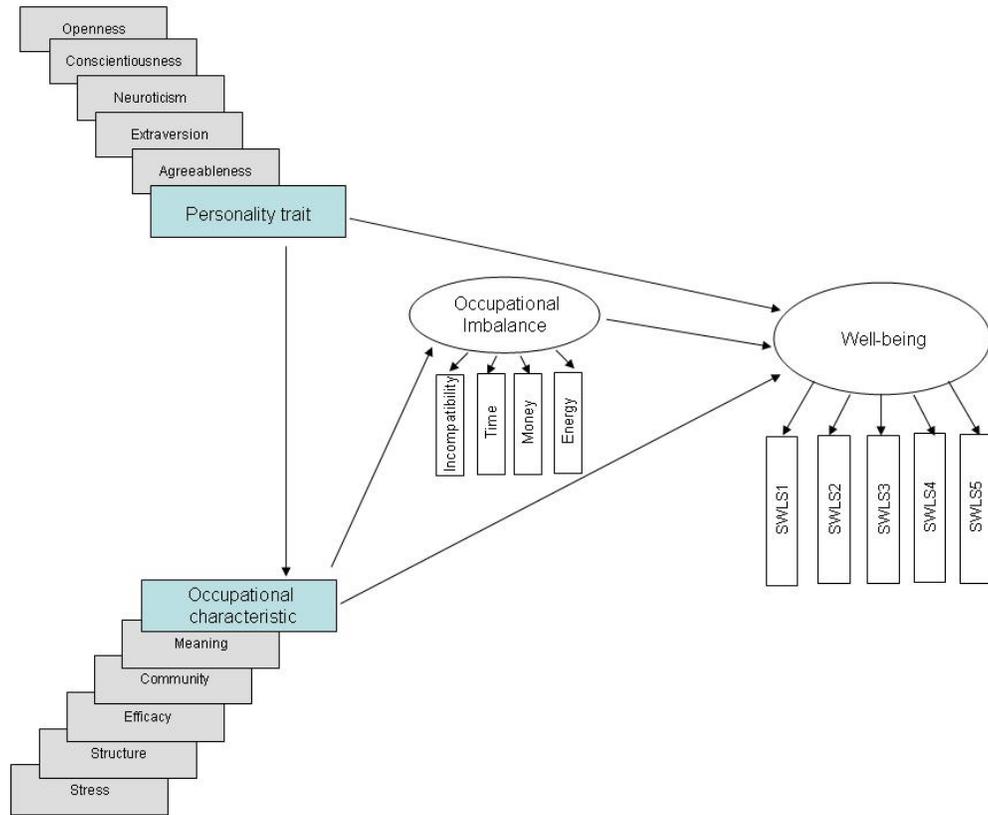
Once the functional relations between the factors were formulated into a model, the identification phase took place. This phase was to ensure that the model is over-identified, i.e., number of parameters known is greater than parameters estimated, so that parameter estimation is possible (Bollen & Long, 1993). Each factor was operationalized (i.e. number of indicators per factor) based on the theoretical definition, sample size and degrees of freedom. The latent variable of well-being was operationalized by five indicators derived from the SWLS items, and the latent variable of occupational imbalance accounted for four indicators derived from the IRQ. According to the literature occupational characteristics are five distinct domains (Little, 1984) as well as personality traits ((John & Srivastava, 1999), and thus we could not set them in one model. Therefore, we have set separate models. In each model one personality trait was present together with one occupational characteristic where the well-being and imbalance factors were consistently present in all the models. Since there were five personality traits and five occupational characteristics we set 25 different models (Figure 5.2).

Based on the theory and the measurements' instructions each personality trait and occupational characteristic was treated as an observed variable (indicator). This ensured our model was over-identified allowing for estimation of the model parameters and assessing fit. When latent variables were present in the same model with observed variables, EQS (a statistical software for model testing) required that all the variables would be presented as latent variables (Byrne, 2006). To be able to address each occupational characteristic as well as each personality trait as a latent variable with only one indicator, we have calculated the error of each indicator based on the following formula: $error = var * (1 - \alpha)$ (Jöreskog & Sörbom, 1993; McDonald & Seifert, 1999). In summary, each model included 11 observed variables and 27 estimated parameters.

Finally, the estimation phase took place and incorporated two sub-phases: the measurement model and the structural model. Both sub-phases were tested via Structural Equation Modeling (SEM) using EQS 6 (Bentler, 1985; Bentler, 1995). In the measurement model, once each latent variable was operationalized, the construct of each factor was examined to confirm its dimensionality using confirmatory factor analysis (CFA). In the last phase, the structural model, which specifies the relationships between the variables, was tested using maximum likelihood estimation. Based on Hu and Bentler's (1999) recommendation, a combination of two indices of fit was considered to determine whether the model fit the data: Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). The cutoff criteria/values for accepting the model were $CFI \geq .95$ and $RMSEA < .08$ (Hu & Bentler, 1999). These indices have been shown to be free of sampling bias. As part of the model testing, the parameter estimates were also examined to see if there were irregular values such as unexpected signs or extreme values. Squared multiple correlations were used to evaluate the variance accounted for each indicator (item).

The minimum sample size required was determined based on Bentler's and Chou's (1987) rule of thumb. They suggested two criteria: 1) a minimum of 5 cases per parameter estimate in the model, and 2) a minimum of 15 cases per measured variable. Given that in each model we had 27 estimated parameters, the minimum required sample size based on the first criteria was 135 (27×5). As each model included 11 measured variables, the minimum required sample size based on the second criteria was 165 (11×15). Thus, our sample size ($n=288$) had more than the minimum required to test using SEM.

Figure 5.2 The 25 variations of the proposed model



Results

Sample Characteristics

The demographic analysis of the 288 participants indicated that 39% were men, with the sample's mean age of 38.6 (SD=9.1). Eighty percent of the participants were married/living with a partner and 70% had children. Participants had a mean of 15.7 (SD=2.5) years of education. Forty-seven percent of the participants' income was above the mean Israeli income and their household density (number of people per room) ranged from 0.2 to 2 (mean=0.83, SD=0.29).

The majority of the sample (68%) was located in urban areas, 20% lived in suburban areas and the rest (12%) lived in rural areas. Participants' overall mean working hours

per week was 43.9 (SD= 12.1); most were professionals (58%) (e.g., engineers), some were associated professionals (17%) (e.g., computer technicians); 11% were clerks; and the rest (14%) had jobs that were classified within the basic range (e.g., transit operators).

The means, standard deviations and the inter-correlation matrix between all the variables included in the model are presented in Table 5.1. Level of occupational imbalance was relatively low (mean=1.98, SD=.49) with little variability (interquartile ranged 1.97-2.29). Level of life satisfaction (mean=24.9, SD=5.25), falling inbetween 21 and 25, represented the upper limit of the *slightly satisfied* level (Pavot & Diener, 1993).

Demographic variables such as gender and SES had no association with the model outcome, that is well-being, whereas age had a small association ($r=0.14$, $p=0.015$) with well-being.

As shown in the inter-correlation matrix (Table 5.1), the correlations between the indicators of well-being were moderate to strong. The correlations between the occupational imbalance indicators had similar strength, except for the 'money' indicator which had the lowest correlations with the rest of the indicators.

Table 5.1 Correlations, means and standard deviations of the measured constructs in the model inter-correlation matrix (n=288).

| | Well-being | | | | | Occupational Imbalance | | | | Occupational Characteristics | | | | | Personality Traits | | | | |
|-----------|------------|-------|-------|-------|-------|------------------------|-------|-------|-------|------------------------------|-------|-------|--------|--------|--------------------|------|-------|-------|-------|
| | Swls1 | Swls2 | Swls3 | Swls4 | Swls5 | Mon | Time | Ener | Incom | Com | Eff | Mean | Struc | Stress | Neur | Extr | Agr | Open | Con |
| Swls1 | 1 | .58** | .58** | .52** | .41** | .00 | -.02 | -.08 | -.02 | .27** | .20** | .24** | .23** | -.13* | -.22** | .15* | .21** | .16* | .10 |
| Swls2 | | 1 | .71** | .42** | .49** | -.03 | -.04 | -.08 | -.001 | .11 | .19** | .14** | .14* | -.14* | -.28** | .12* | .16** | .07 | .05 |
| Swls3 | | | 1 | .51** | .46** | -.007 | -.01 | -.07 | -.05 | .18** | .17** | .20** | .18** | -.05 | -.26** | .14* | .19** | .12* | .10 |
| Swls4 | | | | 1 | .39** | -.09 | -.002 | -.04 | .02 | .15* | .21** | .10 | .20** | -.10 | -.13** | .10 | .06 | .04 | .11 |
| Swls5 | | | | | 1 | -.13 | -.04 | -.05 | -.04 | .10 | .08 | .13* | .09 | -.05 | -.29** | .12* | .07 | .13* | -.03 |
| Mon | | | | | | 1 | .25** | .29** | .15* | .03 | -.04 | .24 | -.03 | .14* | .02 | .09 | .00 | .11 | .07 |
| Time | | | | | | | 1 | .81** | .64** | -.02 | -.04 | -.10 | -.20** | .01 | .00 | .00 | -.03 | .04 | .03 |
| Ener | | | | | | | | 1 | .54** | -.02 | -.07 | -.06 | -.18** | .09 | .10 | .05 | -.05 | -.02 | .00 |
| Incom | | | | | | | | | 1 | .04 | .03 | -.03 | -.15** | .00 | -.05 | .02 | -.02 | .04 | .04 |
| Com | | | | | | | | | | 1 | | | | | -.11 | .20* | .17** | .24** | .19** |
| Eff | | | | | | | | | | | 1 | | | | -.22** | .15* | .17** | .17** | .25** |
| Mean | | | | | | | | | | | | 1 | | | -.15** | .14* | .21** | .27** | .28** |
| Struc | | | | | | | | | | | | | 1 | | -.15** | .13* | .094 | .13* | .33** |
| Stress | | | | | | | | | | | | | | 1 | .21** | .047 | .017 | .11 | -.068 |
| <i>M</i> | 5.01 | 5.17 | 5.39 | 5.05 | 4.38 | 1.35 | 2.18 | 2.25 | 2.2 | 6.95 | 7.46 | 7.78 | 7.26 | 4.15 | 2.56 | 3.5 | 4 | 3.78 | 4.13 |
| <i>SD</i> | 1.36 | 1.28 | 1.19 | 1.37 | 1.55 | 0.44 | 0.61 | 0.66 | 0.78 | 1.49 | 1.23 | 1.03 | 1.11 | 1.23 | 0.76 | 0.72 | 0.47 | 0.46 | 0.58 |

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

Note. SWLS1 to SWLS5 = items 1-5 of the Satisfaction With Life Scale; Mon= money; Ener=energy; Incom=incompatibility; Com=community; Eff= efficacy, Mean=meaning; Struc=structure; Neur=neuroticism; Extr=extraversion; Agr=Agreeableness; Open=Openness; Con=Conscientiousness

The measurement model

The factorial structure of the two latent variables in the model (Occupational imbalance and well-being) was tested using CFA. The single factor-structure of well-being was confirmed (CFI=0.99; RMSEA=0.076). Similarly, indices of fit confirmed a one factor solution for the concept of occupational imbalance (CFI=0.996; RMSEA=0.061) (for further details see chapter 3).

The structural model

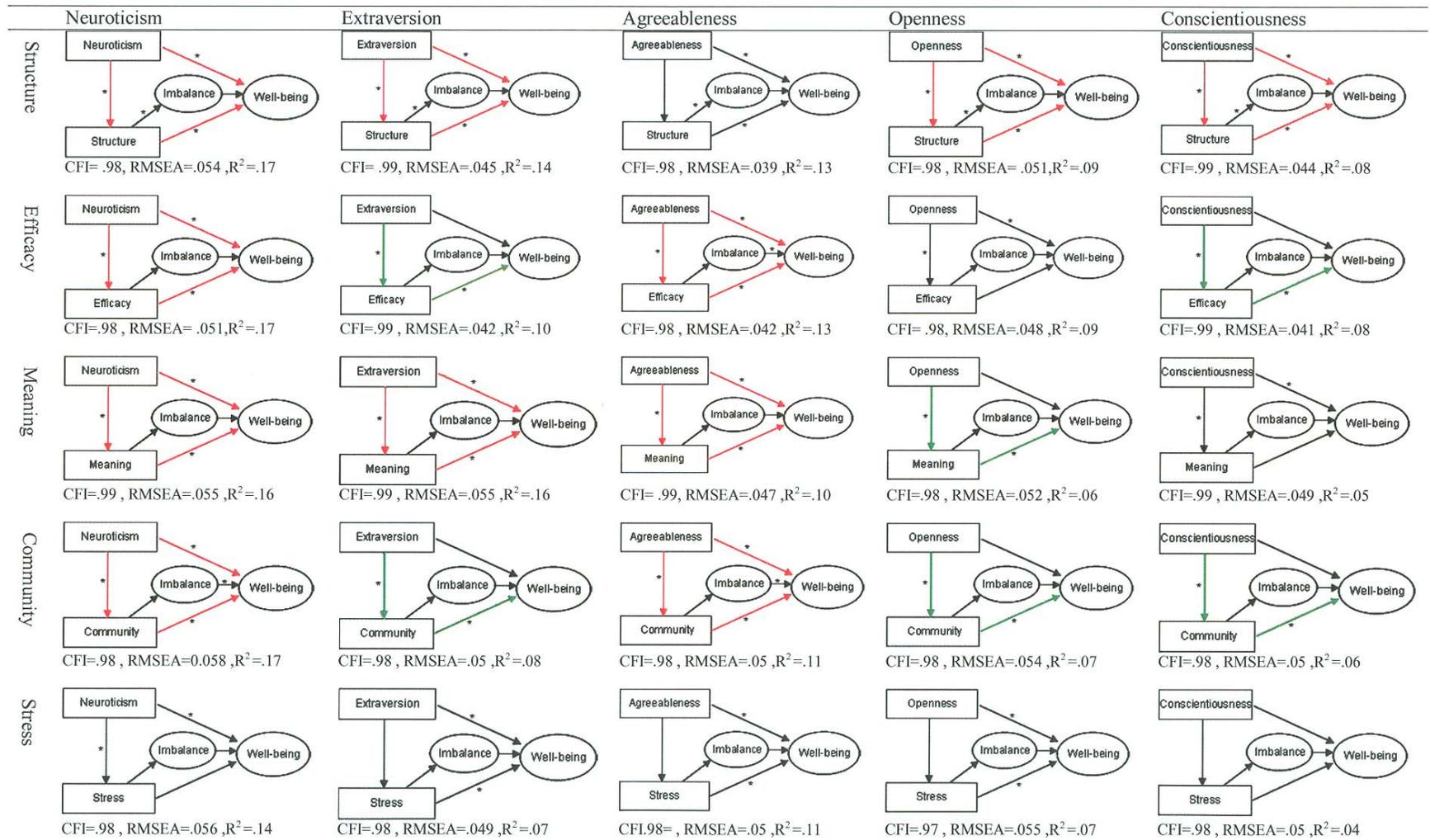
Indices of fit indicated that all 25 models fit the data wherein CFI values were above 0.98 and RMSEA were less than 0.07 (see Table 5.2 for specific values for each model). However, not all the paths (effects) were significant. Several patterns were identified across models:

The role of occupational imbalance in the models –

Occupational imbalance did not play a significant role in the presence of personality traits and occupational characteristics. Moreover, in all models there was no significant effect between occupational characteristics and occupational imbalance except when the model included 'structure' (see Table 5.2). Here the coefficient of the effect was negative (-0.25) indicating that occupations that were highly structured (well organized and under one's control) reduced the level of imbalance (interference among occupations). This pattern was shown among all personality traits.

The only model where imbalance had a direct effect on well-being was in the presence of the personality trait of agreeableness and the occupational characteristic of efficacy. This model explained 13% of the variance of well-being. It is noteworthy that occupational imbalance did not function as a mediator, as expected in the proposed theoretical model.

Table 5.2 The structural relations among the model's variables across personality and occupational characteristics



Note. *= significant path; Red paths denote the mediating role of occupational characteristics; Green paths denote the role of occupational characteristics as exclusive mediators; CFI= Comparative Fit Index; RMSEA= Root Mean Square Error of Approximation; R² = the well-being variance explained by the model.

The role of occupational characteristics in the models - Our model proposes both a direct effect of personality on well-being and an indirect effect through occupational characteristics. Inspired by an occupational science perspective, we were more interested in cases where personality affected well-being *only* indirectly (through occupational characteristics). The sole indirect path highlights the role of occupational characteristics as an exclusive mediator where without the occupational characteristics the effect of personality on well-being would not exist. Thus, we examined the frequency of indirect and direct paths, which were significant, between personality and well-being (see Table 5.3).

Table 5.3 Frequencies of the mediating role of occupational characteristics across the 25 models.

| | Number of times OC served as a mediator | Number of times OC served as an exclusive mediator | total |
|-----------|---|--|-------|
| Community | 5 | 3 | 8 |
| Efficacy | 4 | 2 | 6 |
| Meaning | 4 | 1 | 5 |
| Structure | 4 | 0 | 4 |
| Stress | 0 | 0 | 0 |
| total | 17 (68%) | 6 (35%) | |

Note. OC= Occupational characteristic; Exclusive mediator = the effect of personality on well-being exists only through OC

The occupational characteristic of 'Community' consistently served as a significant mediator for all five personality traits and had the highest frequency of indirect paths. In three out of the five models, personality traits (extraversion, openness and conscientiousness) could affect well-being only indirectly – through their effect on community. Efficacy was the next most frequent mediator. Efficacy served as a significant mediator in the presence of all personality traits except for openness. In two out of the four mediation models personality traits (extraversion and conscientious) could affect well-being only indirectly – through their effect on efficacy.

The occupational characteristic of 'meaning' was a mediator in the presence of all personality traits except for conscientiousness. Only in one out of the four "mediated" models, the personality trait (of openness) could affect well-being only indirectly – through its effect on meaning. Finally, structure served as a mediator in four out the five models except for agreeableness. This time, personality traits had a direct effect as well as an indirect effect on well-being in all 4 models; therefore structure did not function as an exclusive mediator. Looking at 'stress' across all the personality trait models revealed that it did not function as a significant mediator in any of the models.

In summary, among 17 out of the 25 models (68%), occupational characteristics functioned as a mediator (see Table 5.3). The occupational characteristic that functioned as a mediator most frequently was *community* followed by efficacy, meaning and structure, whereas *stress* did not serve as a mediator at all. Most notably, in 6 of the 17 models (35%), occupational characteristics served as exclusive mediators between personality and well-being such that without their presence the effect of personality on well-being would not have taken place. The occupational characteristics of community served as an exclusive mediator three times, efficacy twice whereas meaning once.

The role of personality traits in the models - All personality traits across all the 25 models had an effect on well-being either directly or indirectly. Neuroticism had a direct effect on well-being across all the models. In fact, when neuroticism was present in the models, across all the five occupational characteristics, the models could account for the largest portion of the well-being variance (16%-17%). As we were interested in the exclusive indirect effect between personality and well-being (through occupational characteristics), it appeared that both neuroticism and extraversion influenced well-being indirectly four times. On the other hand, agreeableness, conscientious and openness had an indirect effect on well-being only 3 times (see Table 5.4).

Table 5.4 Frequency of significant paths between personality traits and well-being across the 25 models

| | Number of direct paths | Numbers of indirect paths |
|-------------------|------------------------|---------------------------|
| Neuroticism | 5 | 4 |
| Extraversion | 3 | 4 |
| Agreeableness | 5 | 3 |
| Openness | 3 | 3 |
| Conscientiousness | 2 | 3 |

The directions of the effects in the models - When occupational characteristics served as a mediator between personality and well-being (overall 17 models) the following patterns were identified across all the models: When neuroticism was present in the models it had a negative effect on the four occupational characteristics. In other words, higher level of neuroticism was associated with occupations characterized by lower levels of efficacy, community, structure and meaning, which were associated with lower levels of well-being. On the other hand, higher levels of personality traits such as extraversion, agreeableness, openness and conscientiousness had a positive indirect effect on well-being through the four occupational characteristics. That means that higher levels of these personality traits led to occupations characterized by higher levels of *community* (i.e., supported by others), *meaning* (i.e., congruent with one's values), *structure* (i.e., well organized and under control) and *efficacy* (i.e., in a state of progress through accomplishment), and higher levels of well-being.

Discussion

This study had proposed and tested a theoretical model for explaining well-being with a convenience sample of working adults living in Israel. More specifically, we aimed to confirm the proposed structural relations between personality, occupational characteristics, occupational imbalance and well-being. Overall, the 25 models that were proposed held up to empirical testing; however our hypotheses were partially confirmed. Occupational characteristics served as a significant mediator, yet occupational imbalance

did not. The following discussion will present several explanations for our findings while proposing suggestions for future research.

The role of occupational characteristics in the models

The majority of the models indicated that all occupational characteristics, with the exception of stress, served as a mediator between personality traits and well-being. For example, well-being was influenced by the level of meaning in occupations, which in turn was dependent upon the level of neuroticism. This finding has an important theoretical and empirical contribution. First it provides empirical support to Little's (1999) socio-ecological model that links personality traits with PAC units (i.e., occupations) and positions them as mediators between one's disposition and well-being. In fact, in 35% of the models, personality could have an effect on well-being only through its effect on occupations. This lends more substantial support for the importance of occupation to well-being, in spite of the powerful presence of personality. Similarly, it confirms one of the fundamental assumptions of the occupational therapy profession and the body of occupational science knowledge, stating that occupation has a significant role in promoting well-being.

In addition, as one's occupations can be altered, while personality is a relatively stable construct (Diener et al., 1999), the findings of this study might have clinical implications. Therefore, this study further advocates for the salient role of health professionals who focus on occupation to promote their clients' well-being in situations of disability and life transitions. Moreover, these findings might serve as a building block for future studies aiming to evaluate the effectiveness of occupation-based intervention. These studies might address in their intervention plan the level of community, efficacy, meaning and structure in one's array of occupations as they were found to be significant mediators in this study.

The occupational characteristic of community served as a mediator across all personality traits but it also functioned, in most cases, as an exclusive factor where personality could affect well-being solely through community. The community factor refers to the way the individual perceives how others perceive their occupations and support them. One might say that the social aspect of the occupation is captured by this

characteristic. This means that regardless of one's disposition, it is important for individuals' well-being to be perceived by others positively, to gain others' acceptance and value through occupations. Interestingly, this finding falls within Renwick, Brown and Nagler's (1996) notion of *being*, *belonging* and *becoming* as indicators for quality of life among people with disabilities. It is important for people to *be* part of their community, to have a sense of *belonging* and to *become* a contributing member to society through participation in different life situations. Participating in life situations has been recognized by the World Health Organization (2001) as one of the domains underpinning health, and the present findings support the importance of the lived experience of persons in a societal context as stated by the International Classification of Function Disability and Health (WHO, 2001). As our sample included only people free from mental or physical disabilities, it would be worthwhile to examine in future studies whether the concept of community, reflected in occupations, would be similar within people with disability or in various life transitions (e.g., retirement, immigration) where occupations are often disrupted.

Although the extent to which ones' occupations is supported by others (community factor) was measured using only two items (other's view and visibility), it was still a salient factor in predicting well-being in our study. As this community factor represents a relatively narrow contextual aspect of occupation, future studies might expand and explore additional components of the community as well as additional facets of the social environment reflected in occupations. Examples of additional components might be: 1) the level of actual assistance received from others (e.g., friends, family, and social policy) to carry out an occupation 2) the extent to which one feels their occupations are restricted to or liberated from their environmental expectations, and 3) the extent to which they are satisfied with the relationship that exists between their occupations and their environmental demands. Such inclusive information about the community aspect of occupations might better explain individuals' level of occupational balance as well as their well-being.

The occupational characteristics of efficacy, meaning and structure also served as significant mediators in the models where their effect on well-being was positive, as expected. These findings are in line with previous studies showing that meaningful, well-

organized, supported and efficient occupations were associated with higher levels of well-being (Christiansen et al., 1999; McGregor & Little, 1998; Yetim, 1993). It is somewhat surprising that occupations characterized by stress did not serve a significant role, especially in the face of considerable evidence that stress, reflected in occupations, explains well-being (Christiansen et al., 1999; Lecci et al., 1994; Palys & Little, 1983; Wallenius, 2000; Wallenius, 1999). One explanation might be embedded in our sample. Not only did our participants report lower levels of stressful occupations, but the stress variability was relatively small (and unexpectedly was only correlated to one personality trait: neuroticism). It is plausible that a wider range of levels of stress might have yielded different results. Perhaps engaging in occupations that are congruent with one's values (meaning), supported by others (community), well-organized (structure) and which are in a state of progress toward successful accomplishment (efficacy) acts as an antidote for feelings of stress in these occupations. Certainly the role of stress, reflected in occupations, requires further study.

In addition, the Israeli context of our sample also needs to be considered. There is evidence that after years of living in a climate of political terror Jewish Israelis tend to be more resilient and show great ability to control their level of stress due to the process of habituation (Gelkopf, Solomon, Berger, & Bleich, 2008). One might say that the concept of stress is perceived differently among Israelis. Thus, it is possible that the PPA items are limited in capturing this. Further studies are needed.

The role of occupational imbalance

Unexpectedly, occupational imbalance did not prove to be a significant mediator between occupational characteristics and well-being across all the models. Possible explanations for this are embedded in the way imbalance was measured and in our sample characteristics. Our results indicate that occupational imbalance did not affect well-being directly. Few previous studies showed that interference among occupations, measured by the IRQ, was correlated with well-being; however the method in which well-being was measured in those studies was different. Life satisfaction was measured using a combined score of two measurements relevant to the German context (Riediger & Freund, 2004;

Riediger, 2007). In fact, this combination score has been validated only once. In this study, on the other hand, life satisfaction was measured by the SWLS, a well-accepted measure that represents the cognitive aspect of well-being. This might relate to the difference between the results of this study and those of Riediger and Freund's (2004). Our sample was characterized by relatively low levels of imbalance (mean=1.98, SD=0.49), with relatively little variability of its items, in particular the item related to financial constraints (i.e., money). In addition, our sample had a relatively high level of socio-economic status (SES) based on income, education and household density. It is plausible that our participants were able to afford to hire help with occupations, minimizing the conflict across occupations particularly those that involve money constraints. Most importantly their SES might enable them to choose which occupations they want to carry out in a way that would have decreased the inevitability of giving up valued pursuits. Indeed having a wider range of variability in the level of imbalance might better explain well-being. Thus, future studies should explore the role of occupational imbalance in different samples and use different measures in order to fully investigate this potential relationship before concluding that it does not exist.

Another explanation for this finding lies in the way occupations were elicited, chosen and rated. Participants were asked, in the first module of the PPA, to list 10 occupations they were engaged in. Then, using the IRQ matrix, they were asked to choose four which they considered to be core occupations and evaluate the impact of those occupations on each other. However, a few salient questions were left unanswered: Do participants choose to engage in occupations that are *a priori* less likely to be in conflict with one another? What are the occupations that they were willing to give up? Did they give up valuable occupations? What is the process underlying this decision-making (occupational choice)? The PPA and the IRQ do not provide us with this valuable information. Westhorp (2003) claimed that one of the greater skills for achieving balance is embedded in the process of choosing occupations that can be managed; these which are compatible with one's resources and capabilities. Sometimes an occupation needs to be given up in order to keep a manageable array of occupations (or a balanced state). This might affect one's well-being particularly if that specific occupation was valuable to them. In order to better understand the process of choosing occupations, in depth

interviews should take place while the participants complete the PPA and IRQ. In future studies participants might be asked to identify occupations that were given up and to reflect on the congruency between their occupations and their values. Such information might serve as a preliminary step in capturing the concept of occupational balance more accurately.

Another question that might be raised is related to the process underlying the completion of the IRQ. In the IRQ, participants rated the impact of their occupations on each other in terms of resource constraints (time, energy, money) and incompatibility among occupations. Do participants consider additional criteria to base their judgment while comparing the impact of each occupation on another? For example, is the affective experience of the occupation taken into consideration while rating? Could it be that engaging in one occupation might charge one's energy budget rather than empty it? Say a person has two occupations *writing a paper* and *chairing the annual meeting on women's rights*. Both occupations compete for one's energy, but it could also be that they are so meaningful to the doer and intrinsically rewarding that they play as a source of energy. That experience might replenish one's batteries in a way that would decrease the level of interference between these two occupations or level of occupational imbalance. This is compatible with Marks' (in press) approach to human energy where individuals become charged with attentiveness and energy due to the interest they find in a certain activity they are engaged in. Indeed, carrying out an occupation involves an expense of energy, but at the same time it might also provide energy (Håkansson et al., 2006). However, the IRQ refers to energy as a resource constraint. One might say that the concept of energy is perceived differently across the participants and is influenced by other aspects of the occupation. In fact, there are many different combinations of impacts among occupations and we do not know exactly what our participants were thinking while evaluating this impact. It might make more sense to evaluate imbalance from a global perspective rather than focusing on the impact of each pair of occupations. A mixed-method approach, that combines qualitative methods (in-depth interview) and quantitative methods (using IRQ) might be helpful in clarifying these issues.

Occupational imbalance was influenced solely by structured occupations. That means that a well organized array of occupations that is managed effectively (structure)

leads to less interference among occupations (lower levels of occupational imbalance). On the other hand, the level of occupational imbalance was not influenced by occupations that are worthwhile (meaning), supported by others (community) and likely to succeed (efficacy). Upon reflection, one might say that occupational imbalance, as was measured in this study, is more sensitive to *extrinsic* aspects of occupations (e.g., how well they are organized and managed-structure) rather than to *intrinsic* aspects related to a deeper layer of the subjective experience derived from engagement in occupation (e.g., meaning, community and efficacy). At first glance, this finding might be perceived as contradicting Jonsson and Persson's (2006) claim that the affective experience (i.e., intrinsic aspect) of occupations is salient to occupational balance. However, they addressed balance in occupation rather than imbalance. As it has been shown that occupational balance and occupational imbalance are two distinct concepts that can co-exist (Riediger, 2007; manuscript 1), one might say that the intrinsic aspect of occupations (e.g., meaning) is related to occupational *balance* whereas the extrinsic aspect (e.g., structure) is related to occupational *imbalance*. Further studies are needed to verify this assumption.

The theoretical aspect which the concept occupational imbalance was derived from in this study might be reexamined. Recent theoretical aspects of occupational balance, emerging in the current literature, introduce a different perception of occupational balance. In an attempt to define the concept, the current focus is on the quality of one's occupations. For example, balance is perceived as a state where one's occupations meet one's psychological needs (Christiansen & Matuska, 2006); are congruent with the individuals' values (Pentland & McColl, 2008) and provide affective experience that promotes well-being (Jonsson & Persson, 2006). These innovative approaches for life balance draw researchers' attention to the quality of one's occupations, their nature, and their characteristics. One might say that the quality of occupations, which proposed to reflect a level of balance, is somewhat being captured by the "occupational characteristics" factor in our model. For example, the occupational characteristic of *meaning* embeds occupations that are congruent with one's values and identity, which are considered as important and enjoyable; these occupations which individuals are profoundly engaged in. Perhaps an extended format of the PPA might capture these

qualities of occupations that are important to balance. However, further studies are needed to clarify the specific characteristics of occupations that represent a balanced life and how the new definitions to balance can be operationalized. It is plausible to say that our findings provide initial support for the new conceptual definitions of balance that focus on the quality of occupation, as we found that occupational characteristics played a significant role in explaining well-being. Indeed, further studies are needed to clarify the complex concept of occupational balance using triangulated methods.

The role of personality

Personality traits had a consistent effect on well-being across all models as expected. Coming from an occupational perspective, we were interested in the effect of personality on well-being through occupational characteristics. Neuroticism and extraversion demonstrated this indirect effect most frequently. In the presence of neuroticism the models could explain the greatest amount of the well-being variance. These findings coincide with the well-being literature where neuroticism and extraversion are considered as the most influential traits (Diener et al., 1999).

In some cases, personality could affect well-being *only* through its effect on occupations. For example, extraversion did not influence well-being on its own and required the presence of community-related occupations. It is plausible that the behavioral tendency of extraverted people, who seek social stimulation, is highly expressed in their occupations which are more community-oriented: supported and visualized by others.

Although traits are considered powerful factors in their ability to explain well-being, our findings imply that studying individuals' behaviors cannot rely only on one level of personality research, such as traits. Little (1996) has termed this level of one's traits as the *having* aspect of personality. This study supports his argument that additional levels of investigation should be included such as the *doing* aspect of personality which is reflected in one's occupations, personal projects or goals (Little et al., 1992). Future studies might consider additional levels such as the narrative accounts of what people do, termed by Little (1996) as the *being* aspect of personality. Such an inclusive perspective of personality might explain well-being further more.

Limitations

As a cross-sectional study no absolute cause and effect claims can be made. However, as the models fit the data well, the SEM allows us to conclude the dependency between the variables. Future studies (i.e., longitudinal and pre/post semi-experimental design) are needed to confirm this study's proposal of the structural relation between the variables. In addition, testing this study's model during fragile life situations where one's occupations are being disrupted (e.g., becoming a care-giver, retirement, acquired disability) is critical. At these points of time the level of imbalance might increase and jeopardize one's internal set level of well-being (Cummins, Lau & Davern, in press). It might be that in these situations the effect of one's occupation and occupational imbalance on well-being will be more profound.

It is worthwhile noting that this study was carried out with a convenience sample, which was quite homogenous and therefore may not be representative of the population. This might limit its generalizability. However, based on normative data, the sample's life satisfaction score had a similar distribution to other non clinical samples (Pavot & Diener, 1993).

Specific cultural aspects may have affected our findings, which therefore need to be interpreted with care. For example, the concept of stress, reflected in one's daily occupations, might play a significant factor in predicting well-being among people from different political contexts (Wallenius, 2007). Moreover, Israelis might perceive imbalance among occupations differently as their overall daily life dynamics fluctuate. They tend to engage in occupations spontaneously, in a less formal and structured way, which does not necessarily follow a restricted plan or a firm rhythm. In fact, disruption in daily routine is a familiar state in an ongoing threat of terrorism. As a result Israelis have developed resilient coping strategies to maintain their habitual lifestyle (Pat-Horenczyk, 2006).

Conclusions

Our study provides substantial support for the notion that occupation affects well-being. The fact that occupational characteristics served as a mediator between personality and

well-being is important from both a theoretical and clinical perspective. Personality is a fairly stable construct that is less amenable to change whereas occupations can be altered and redesigned. Thus, occupations serve as a fertile ground for intervention that might lead to a change in one's well-being. Future occupational-based intervention studies are needed among different populations across the life span.

The notion of the social environment reflected in one's occupation (community factor) was also an interesting finding. Our findings suggest that the extent to which individuals believe that their occupations are perceived by others as important and valuable is salient to their well-being. This might draw therapists' attention to the social context as a facilitator or a barrier, especially as clients are struggling with the issue of stigma. However, further studies with people with disability are needed to verify this assumption.

Certainly, the concept of occupational imbalance needs to be reexamined. Three directions of inquiry might take place: 1) reexamining the process that underlies the completion of the PPA and the IRQ using qualitative methods while focusing on the process of choosing occupations, identifying the occupations that were given up and reflect on their values 2) embracing innovative theories for defining life balance while focusing on the quality of one's occupations (value, meaning) rather than on the way occupations are being constructed and managed (e.g., Pentland & McColl, 2008), and 3) developing new tools that are congruent with the evolving definitions of the concept.

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Chapter 6 – Discussion

This study proposed and tested a conceptual model that specifies the structural relations between personality, occupational characteristics, occupational imbalance and well-being. Although the proposed model positioned occupational characteristics and occupational imbalance as mediators between personality and well-being, the tested model confirmed only the mediating role of occupational characteristics.

The process of constructing the model included several steps: defining the main model concepts (well-being and occupational imbalance), stating the theory they were derived from, looking for measures that are congruent with the chosen theory and finally, validating the construct of each concept. Findings from the first three manuscripts guided the model-testing phase presented in the final manuscript.

Two participant samples provided the study data. The first sample (n=122+pilot) was used to explore the methodological strategy for measuring occupational balance while looking at the rated impact of the occupations on each other. Based on the first manuscript, the CIM of the PPA was replaced with the IRQ while focusing only on the interference scale of the IRQ and its relation to the cognitive aspect of SWB, i.e., life satisfaction. The second sample was used to examine the structural relations among the variables in the model (n=288). Although the results of the pilot study (manuscript 1) supported the usage of the IRQ interference sub-scale to capture occupational imbalance and its construct was confirmed (manuscript 2), occupational imbalance did not function as a mediator in the model (manuscript 4). Moreover, it appeared that occupational characteristics were the ones that functioned as significant mediators suggesting that the nature of one's occupations, rather than the level of occupational imbalance as measured in this study, is what is important to well-being.

The following discussion raises several explanations for findings of the study in light of recently emerging theoretical approaches, while suggesting future lines of inquiry. In addition, the contribution of the study to the field of occupational science and occupational therapy is stated while addressing its limitations. Overall, the discussion is derived from an occupational perspective and would therefore focus more on the occupational-oriented variables rather than personality.

The non-significant role of occupational imbalance - conclusion and future directions

Theoretical explanation - the "why" is in the theory

The lack of effect of occupational imbalance in the models might have theoretical explanations which lie in 1) the perspective that guided the conceptualization of occupational imbalance; 2) the experience of a state of imbalance in the past; and 3) the role of the environment.

1) Conceptualization of occupational imbalance – *the how* versus *the what*

Occupational imbalance, when measured as interference among occupations, did not affect well-being. Instead, the characteristics of the occupations one engaged in was associated with well-being. It is plausible that occupational balance is not about the configuration of daily life, or the level of conflict among one's occupations, i.e., *the how*, but rather embedded in the quality of one's occupations or their characteristics, i.e., *the what*, (e.g., values). Erlandsson and Eklund (2006) found that the complexity of daily occupations, i.e., the extent to which occupations are interrupted during the day, could not explain well-being. Pentland and McColl (2008) recently argued that what is important for a balanced life is engagement in occupations that are congruent with one's values, strengths and attribution of meaning. They postulated the term *occupational integrity*, i.e., a state where one's occupations are congruent with their values, to replace the term occupational balance. Thus, rather than asking participants if they can manage their occupations in accordance with their resources, we might ask participants if they value the occupations they are engaged in. In a qualitative study, women emphasized that when their values guided their occupational choices they experienced a sense of balance (Håkansson, Dahlin-Ivanoff, & Sonn, 2006).

Moreover, it has been suggested that values play an important integrative role in the association between personality and well-being, and values moderated the effect of daily activities on daily satisfaction (Diener, Oishi, & Lucas, 2003). Some people might "risk" their immediate well-being and their balance in order to act according to their values (to engage in valuable occupation) (Diener et al., 2003). Others might resist change that threatens their balance and avoid new occupations (Pentland &

McColl, in press). This falls within Westhorp's (2003) proposed *cycle for achieving occupational balance* which describes the process of deciding which occupation one should carry out and which occupation to avoid in order to maintain a state of balance in occupations. The process of choosing occupations encapsulates giving up other occupations which might be salient to one's well-being, particularly if these "lost" occupations were valuable to the doer. Our findings, as well as current theoretical approaches, might spawn a new avenue of research that focuses on the value people attribute to their occupations and the underlying process of decision-making while striving for balance in everyday life. Moreover, it draws researchers' attention toward what people *do not do* rather than what people *do*; the value people attribute to occupations which were left behind; the reason specific occupations are *in* and others are *out*; Is it due to the individuals' values, social expectations or resources constraints? Are people choosing occupations that enable them to maintain a certain level of balance in their occupations? Certainly, future studies are needed to answer these questions and identify the specific characteristics of occupations that are relevant to occupational balance.

Not only was the occupational characteristics of meaning (e.g., occupations that are congruent with one's values and identity) found to effect well-being in this study, but also other qualities of occupations such as community (the extent to which one's occupations are supported by others), efficacy (the extent to which occupations are in progress toward a successful accomplishment) and structure (well organized and controlled occupations). One might find similarities between these characteristics, derived from the PPA, and the psychological needs met through occupations suggested by Matuska and Christiansen (2008) in their innovative model of lifestyle balance. They postulated that when occupations meet psychological needs (e.g., relatedness, competence, and self-actualization) a balanced life and well-being are achieved. For example, the occupational characteristics of *efficacy* (e.g., successful accomplishments of occupations) and *structure* (e.g., a sense of control in occupations) are closely related to the human psychological need of feelings of competence, self-efficacy and a sense of mastery over one's life. Although the linkage between the conceptual scope of occupational characteristics, derived from the PPA,

and the psychological needs, derived from Matuska and Christiansen's model (2008), is only a preliminary suggestion, researchers might draw on it to develop testable hypotheses. One possible line of inquiry is to adapt the PPA rating matrix to capture the attributions of occupations according to a selected theoretical model. The PPA allows the researcher to add items (i.e., any occupational characteristic of interest) to guide the appraisal of occupations according to the research question (Little & Gee, 2007). For example, according to Matuska and Christiansen (2008) one of the psychological needs, which is met through occupation and promotes balance and well-being, is having rewarding relationships with others. Adding an item to the PPA matrix that captures this need might provide vital information to explain well-being and better capture untapped components of the concept of balance (e.g. asking participants with whom they engage in a certain occupation and how close they feel to that person). If Pentland and McColl's (2008) theory is embraced, adding items related to the environmental demands reflected in occupation might be useful (asking whether individuals are satisfied with the conflict or fit between their occupation and the environment expectation). Lastly, in congruence with Jonsson and Persson's theory of occupational balance (2006), items related to the affective experience of occupation might be added. In such way, the use of the PPA structure combined with occupational characteristics, relevant to occupational balance, might enable researchers to test these new theories.

Given all that, it seems that the findings of the present study, which suggest looking at the experiences derived from individual occupations rather than the way people balance them, are in line with new approaches to the concept of occupational balance.

2) Did you ever experience a state of imbalance?

When examining one's level of imbalance in occupations, it might be important to know whether they have ever experienced a state of imbalance in the past.

Hakansson, Dahlin-Ivanoff and Sonn (2006) conclude that people can reflect on their life balance in a comprehensive way only if they experienced a situation of being "out of balance" when their array of occupations has been disrupted. Women in their study could not reflect on the balance in their everyday life until they had lost it. For example: illness of one of the members of the family and/or of the person themselves,

a period of unemployment or in between work, and immigration, among other life transitions (e.g., graduation, becoming a care giver, discharge from the army, maternity leave, sabbatical). Future studies might intentionally include people that have experienced a past state of imbalance in their occupations or major occupational transition/disruption. Moreover, it might be beneficial to guide participants when they evaluate their occupational imbalance, to compare their current experience to past experience. For example, asking participants to look back at that point of time when they experienced imbalance in occupations and rate themselves then and today. Using this method to measure occupational imbalance and well-being might shed further light on the effect of occupational imbalance on well-being.

3) The role of the environment in designing individuals' occupational balance

The context/environment was implicitly addressed in this study by the process of listing and appraising occupations while completing the PPA, especially the occupational characteristic of community. This occupational characteristic (the extent to which one perceives their occupations as supported by others) reflects the social context of the occupations. In fact, this occupational characteristic of community functioned as a mediator in all of the personality models, where in most cases it served as an exclusive mediator highlighting the importance of the social context. Moreover, current models recognize the environment as an important domain that influences occupational balance (Matuska & Christiansen, 2008; Pentland & McColl, 2008).

Consequently, future studies might explicitly address the effect of the different facets of the environment in shaping individuals' balance in occupations. Such potential facet of the environment is the cultural context, in particular the values that guide specific groups and societies and are reflected in one's occupations. It has been suggested that the values of a society such as those of power, control and competition lead to an accelerated life style, efficient occupations, little place for rest and reflection and occupational imbalance (Persson & Erlandsson, 2002). On the other hand, communities or social groups that value altruism and collaboration for instance, might serve as a solid social network that would support all group members and might promote a balanced life.

It is plausible that the model presented in this study would apply differently to eastern thinking, which may enshrine collectivism, compared to western thinking where capitalism and individualism may be cherished. Indeed, future studies are needed to better understand the role of social values at the micro (e.g., individual), meso (e.g., family) and macro level (e.g., society).

As social values shape social policy they also determine the opportunities for engaging in occupations provided or hindered by the environment. For example 1) the level of social support and social welfare 2) the existence/presence of occupational oriented programs relevant to different cultures, age groups and gender, and 3) the way the physical environment is designed to facilitate engagement in occupations in a balanced way.

Other environmental conditions may deprive one's occupations such as in countries experiencing political unrest, poor national economies and certain political regimes.

The socioeconomic context is an important environmental condition in the discourse on balance and work-life balance in particular. Occupational balance is likely experienced differently as a result of being affluent compared to being poor.

Whiteford (in press) suggested that balance is only a problem for affluent society whereas the working poor do not have the "luxury" of reflecting on balance or striving to achieve it, as they struggle to survive. As Whiteford (in press) stated: "balance may be irrelevant or a low priority in the face of issues of survival".

The "why" is in the methodology

The methodological explanation for the insignificant role of occupational balance in the models lies in the sample characteristics and in the study measurements. Since the methodological issues were broadly discussed in chapter 5, they will be addressed briefly here. The study's sample was characterized by a relatively high level of socio-economic status which might influence the variability in the IRQ items. Although the overall structure of the scale was confirmed (manuscript 2), the item related to financial constraint (i.e., *money*) had the lowest loading; the smallest contribution to scale variance (manuscript 2); and the lowest correlations with the rest of the items (manuscript 4).

In addition, the cultural context of our sample might shape the way the IRQ items, i.e., money, energy, time, and incompatibility, are being perceived in Israel.

Another item for consideration is the *energy* constraint which might have a positive effect rather than a constraining one in situations where engaging in occupations may function as a source of energy (Marks, in press). Overall, in the IRQ the comparison between occupations is based on resource constraints of time, energy and money. One might say this comparison is based on the theory of scarcity that suggests that people run into difficulties in managing their multiple roles as they are restricted by time and energy. Yet the applicability of this theory to the concept of occupational imbalance has been critiqued by Marks (in press). He postulated that occupational imbalance is not dependent on human resources but rather on the interest derived from the occupation and the commitment towards it. Again, another recent innovative theory that appreciates the quality of the occupation while examining the notion of occupational balance.

It is plausible that rating the impact of each occupation on the other might encapsulate different criteria than those mentioned in the IRQ. Thus, merging a qualitative approach (e.g., in-depth interviews) with the completion of the IRQ might illustrate the process underlying this comparison. Such mixed-methods approach might reveal other criteria that participants embrace while comparing each occupation to another. These criteria might be related to environmental barriers or aspects/characteristics of the occupation itself (e.g., difficulty, enjoyment, value). It would be important to explore the thinking behind the rating in order to fully understand the concept of occupational imbalance and appreciate individual variations.

Given all that, additional studies are needed to further explore the effectiveness of the IRQ while addressing the sample characteristics and combining qualitative methods.

Certainly, the concept of occupational imbalance needs to be reexamined. Five directions of inquiry might take place: 1) reexamining the process that underlies the completion of the PPA and the IRQ using qualitative methods while focusing on the process of choosing occupations, identifying the occupations that were given up, reflecting on the congruency between the individual's values and the occupation they gave up, and exploring additional criteria that guide that rated impact of the occupations

on each other ; 2) embracing innovative theories to define life balance while focusing on the quality of one's occupations and incorporating these qualities in the Rating Matrix of the PPA; 3) developing new measures that are concurrent with the evolving definitions of the concept; 4) examining the role of the environment in shaping one's balance in occupations; and 5) including people that have experienced a state of imbalance among their occupations in the past.

The significant role of occupational characteristics in the model and future directions

This study examined the participants' perception of their occupations in terms of meaning, efficacy, community, structure and stress, regardless of the occupations themselves. Yet the content of the occupations, their type and the category they fall into (e.g., work, leisure, self-care, inter-personal, or educational) might provide essential information in future studies explaining well-being along with clinical implications. For example, it has been shown that fewer social and interpersonal projects were related to lower levels of mood states (Salmela-Aro & Little, 2007); women with eating disorders reported more food-related occupations (Barris, 1987) and hypochondriac tendencies were associated with more health-related occupations (Károly & Lecci, 1993). However, another study did not find a difference in occupational categories among people with Multiple Sclerosis compared to a non-clinical group (Brooke, Desmarais & Forwell, 2007). It is plausible that specific types of occupations might stand up more in cases involving mental health issues and/or severe disabilities. Certainly, this assumption needs further study. Perhaps addressing both the content (categorization) of the occupations and their appraisals, according to the five occupational characteristics might be more effective in future studies. Hence, a mean score for level of meaning, for instance, could be generated for each occupational category determined by the individual (i.e., work, leisure, self-care, educational and interpersonal). For some people the level of meaning in interpersonal occupations might be more important to well-being than meaning in self-care occupations. In accordance with this idea, Wallenius (2007) showed that the relation

between stressful projects and health was explained by different types or category of occupations.

Other types of occupations might also be taken into account, such as *abstract* occupations versus *concrete* or *obligatory* occupations as opposed to *discretionary*. For example, the abstract occupation *to be a better mother* may be more congruent with values, but one may get tied up trying to complete concrete occupations (e.g., *driving my son to swimming lessons*) that are relevant but not necessarily the essence of that occupation. The whole is more than the sum of its parts. It is plausible that abstract occupations which are ongoing occupations and might never end might be perceived to be more stressful yet more meaningful. On the other hand, concrete occupations are easier to see and accomplish, have a clear start and end, might be less stressful yet less meaningful. Similarly, one may experience imbalance when overburdened with seemingly obligatory occupations, yet when engaging in discretionary occupations, one might feel greater sense of balance, well-being and congruency with values. The idea of focusing on the characteristic of occupations within a type of occupation might serve a novel way of contemplating balance and well-being. Furthermore, such focus might highlight the distinction between occupational balance and occupational imbalance as suggested in chapter 2. Yet further studies are needed.

Finally, another research trajectory would be to examine whether the relation between a specific occupational characteristic and well-being is dependent on other occupational characteristics. For example, this present study found that making progress in one's occupation (efficacy) had a significant effect on well-being. At the same time, it could be that progress of important projects that are congruent with one's values (meaning), and of difficult and challenging projects (stress) may have a greater association with well-being. In other words, people might experience greater well-being if they make progress and succeed in occupations that they consider as most important and highly difficult than people with comparatively less important and easier occupations. Thus, future studies might consider examining the interaction between occupational characteristics themselves to better explain well-being.

Additional factors in explaining well-being: Intimacy and social support

There are other factors that might affect the level of imbalance and well-being which were not examined in this model. Such factors are social support (Bishop, Martin, & Poon, 2006) and intimacy (Hofer, Busch, & Kiessling, 2008). Perhaps people could control their level of imbalance among occupations due to high levels of socially supported environments. For example, the ability of a working mother to manage her occupations in a balanced state is a result of a supportive family member (e.g., grandmother). In addition, our sample was characterized by a relatively high level of socio-economic status. It is plausible that our participants were able to afford a paid assistant that enabled them to keep their occupations in a low level of conflict. Moreover, it allowed them to shift their time and energy to desired and valued occupations, thereby expanding their freedom to choose occupations. Most importantly, it might enable them to choose which occupations they want to carry out in a way that would decrease the inevitable situation where valued occupations are given up. Certainly, future studies might address the influence of social support and financial resources on the process of choosing occupations and balancing them, and how they in turn affect well-being.

Another factor that has gained increasing attention in recent research on well-being is intimacy derived from Ryff's (1989) theory of human universal needs. The affiliation-intimacy motive represents the concern for a warm, close and trusting relationship, and a concern for establishing or restoring positive affective relations with other persons or groups. Positive relations with others were positively associated with life satisfaction (Hofer et al., 2008). The fact that this relation is moderated by personality highlights its affinity to our model. Moreover, Matuska and Christiansen (2008) addressed occupations that enable people to have rewarding and self-affirming relationships with others as one of the domains in their proposed lifestyle balance model. Since having close and trusting relationships, i.e., intimacy, is associated with personality, well-being and life balance, it seems that this factor could have played a significant role in our model. One might say that our participants' close relationships were addressed while listing and appraising their occupations; for example *share with my close friend issues over a coffee* or *talking on the phone with colleagues*. However, we do not know what the nature of these relationships was in terms of level of intimacy and

reward. Thus, future studies might address occupations that are relationship-oriented in further exploring the concept of intimacy, occupational balance and its relation to well-being. Again, addressing the content of occupations and the way they are categorized is important to untangling how occupations and occupational balance influence well-being.

Theoretical contribution to the field of occupational science and occupational therapy

This study has a theoretical/conceptual contribution to the field of occupational science, an interdisciplinary body of knowledge that studies the notion of occupation, and a clinical contribution to the occupational therapy profession, which uses occupation as a medium of intervention and as a target end. These two fields are linked to each other since occupational science serves as a basic science that informs the practice of occupational therapy. In fact, this study focused on two salient concepts for both occupational therapy and occupational science: occupation and occupational balance.

The proposed model in this study integrated theoretical assumptions from different fields: personality science, occupational science, occupational therapy and positive psychology. One of the important findings, which emerged by constructing the model, was the extent to which the concept of occupation in its different labels and configurations is rooted in other disciplines that do not necessarily consider themselves as part of occupational science. It reveals the considerable extent to which well-being is viewed from people's daily behavior and action (or what occupational scientists term occupation) to name approaches developed by Little (Little, 1984), Diener et al. (Diener, Suh, Lucas, & Smith, 1999), Csikszentmihalyi's (1997), Kahneman, Krueger, Schkade, Schwarz and Stone (2004), Riediger and Freund (Riediger & Freund, 2004) among others. This highlights the common interest of these fields, which is occupation, and further expands the scope of the umbrella of occupational science. This study thereby contributes to the recognition of a fairly new and evolving science.

Not only did occupational characteristics serve as a significant mediator in the majority of the models, but in some cases the relation between one's personality and well-being could be observed only in the presence of occupation. These findings position

occupation at the forefront of the ongoing discourse on well-being by emphasizing its importance and sometimes exclusive role in explaining well-being. This thereby supports a fundamental assumption of the occupational therapy profession and one of the premises of the occupational science discipline: that occupation is inextricably linked to well-being. As both fields have myriad theoretical models there is a need to confirm and validate them. This study proposed and tested a conceptual model for the first time and hence provides a further substantive contribution both to the basic and applied sciences. In addition, the study provides some clarification regarding the concept of occupational balance which may serve as a building block for future conceptual models.

As this study highlights the important role of occupation to individuals' well-being, it contributes to the salient process of bridging the gap between occupation, health and well-being introduced by Wilcock (2005). Findings from this study might serve as empirical evidence when communicating with policy makers, to foster supportive environments for participation in occupation and in advocating for building healthy public policy (i.e., occupational programs/opportunities in accordance to cultural groups and age). Additional studies are needed to further enable occupational scientists and occupational therapists to have specific evidence to back up their claims. These studies might address facets of the environment that affect engagement in occupations and in balancing them, or examine occupational balance among different populations.

Clinical implications

Although the conceptual model was not tested on people with disabilities it has an important contribution to the practice of occupational therapy. As occupational therapists view the human as an occupational being beyond the disability, results of this study help therapists gain a better understanding of the nature of occupation that leads to well-being. This falls within the *disability paradox* (Albrecht & Devlieger, 1999) that showed that people can experience a high quality of life despite the presence of a disability. Humans have innate strivings to meet fundamental psychological needs that promote well-being such as self-actualization (Maslow, 1970), self-acceptance, purpose in life and positive relations with others (Ryff, 1989) even in times of difficulty. These essential psychological needs can be met through occupations. Further studies are needed to

examine the applicability of this model in situations of disability. Moreover, the profession's responsibility is to also address disadvantaged communities, and in situation where occupations are likely to be disrupted such as in life transitions (Wilcock, 2005). Embracing a family-centered practice, family members and caregivers of our clients are considered clients as well. Their well-being and occupation are also one of the occupational therapists' concerns. Knowledge revealed in this study might guide therapists while advising caregivers.

As occupational balance is a universal construct within western societies one might say therapists themselves might benefit from knowledge that would help them lead a healthy and balanced life. This might have a secondary effect, when therapists leading by example, live a balanced lifestyle while educating their clients. In fact, the role of occupational therapists is not just limited to increasing individuals' well-being through occupation but also in taking health promoting action by advocating for occupational environments that promote individuals' well-being (Townsend & Polatajko, 2007; Wilcock, 2005; Yerxa, 2002).

The role of occupational characteristics as an exclusive mediator in many of the models have an important clinical implication since personality traits, as opposed to occupations, are relatively stable constructs that are less amenable to change. Hence intervention at the occupational level might lead to a change in clients' well-being. This study's findings might guide the clinical reasoning of occupational therapists, focusing on enabling healthy occupations, to redesign their clients' array of occupations to be perceived by the client as: supported by others (community), in a state of progress (efficacy), in accordance with the clients' values and identity (meaning), and as well organized and under control (structure). In fact, occupational characteristics of community served as a significant mediator across most of the tested models. This might draw therapists' attention to the social context that the client lives in, coming to realize how important it is to the individual to feel that their occupations are visible to others and perceived by others as important. This might be even more salient for people with disabilities as they might encounter stigma. Taking together the findings of the study and emerging theories, the clinical reasoning of occupational therapists may be guided to

consider alternative occupations that share common characteristics to those that had to be given up due to illness or disability.

However, further studies are warranted to examine this assumption among people with disabilities, in particular studies aiming to evaluate the effectiveness of occupation-based intervention. These studies might address in their intervention plan the level of community, efficacy, meaning and structure in one's array of occupations as they were found to be significant mediators in this study

The measurements that have been used in this study: the PPA, IRQ and SWLS, might be of clinical interest. The PPA has been identified by occupational therapy scholars as a useful method to measure occupations (Backman, 2001; Christiansen, Little, & Backman, 1998; Forwell, 2006) yet it seems that it is infrequently used in practice. This study brings additional support for its merits, particularly as it served as a significant mediator in explaining well-being. The PPA is a client-centered measure that might be beneficial in identifying important occupations to the client, setting target outcomes and revisiting them as intervention continues. Drawing on the PPA might guide therapists and clients to identify new ways to engage in occupations; shift expectations, focus and reroute energy to more attainable and realistic occupations that are still congruent with the client's values and interests and promote well-being. One might say that the PPA must first be examined with people with disabilities and in life transitions to establish evidence for its suitability. Indeed, the PPA was examined with people with Multiple Sclerosis (Forwell, 2006), women with eating disorders (Barris, 1987), people with bipolar disorder (Meyer, Beevers, & Johnson, 2004), depression (Lecci, Karoly, Briggs, & Kuhn, 1994), children with diabetes (Karoly & Bay, 1990) cardiac patients (Wenzel, 2000), hypochondria and cancer (Peterman & Lecci, 2007); and in life transitions such as from attending school to working (Nurmi & Salmela-Aro, 2002), and the transition to parenthood (Salmela-Aro, Nurmi, Saisto, & Halmesmäki, 2000; Salmela-Aro, Nurmi, Saisto, & Halmesmäki, 2001). Given all that, in the clinical setting the PPA might function as 1) a stimulator/facilitator for discussion with the client about current occupations that would lead to setting occupational goals, and 2) an outcome measure that is sensitive to change in clients' occupational-goals and well-being. However, further

studies are needed to examine these proposed clinical utilizations of the PPA, in particular as the PPA requires a fairly high level of cognition/education to complete, and therefore may not be applicable to all areas of practice.

It is important to note the additional contribution of the PPA in comparison to closely related measurements existing in the field of occupational therapy. One effective and widely accepted tool is the Canadian Occupational Performance Measure (COPM) (Law et al., 1994). The PPA, compared to the COPM, provides a broader and richer perspective on one's occupation as it is not limited to specific occupational areas/categories and occupations are evaluated according to various parameters. Moreover, the PPA addresses the overall array of one's occupations; not just those which pose problems to the person but also those that have a positive effect on the person's well-being.

The IRQ is another client-centered instrument that might be useful in the clinical setting. However, it has not yet been tested with people with disability nor associated with well-being in the present study; thus it should be used with caution. Its interference sub-scale addresses the impact of one's occupations on each other in terms of resource constraints. Completing it might stimulate a discussion between the client and the therapist concerning occupations that are in conflict with each other. This discussion might identify the source of the conflict, or barriers for participation, and yield strategies to overcome it. This can be done by modifying one's environment as well as redesigning an individual's array of occupations. For example, the component of *energy* constraint that interferes with engaging in daily occupations is critical for clients with a low budget of physical energy, such as people with multiple sclerosis, rheumatoid arthritis, or fibromyalgia. At the same time, while reflecting on the impact of occupations on each other, additional constraints may come up which could be related to environmental barriers. Certainly, drawing on the IRQ, as opposed to using its scores, might raise valuable information both for the client and the therapist.

Finally, the SWLS can also have a clinical interest, particularly when well-being is considered as one of the rehabilitation outcomes. The scale was found suitable for the Israeli context (manuscript 3) and was examined previously among people with a disability (e.g., Arrindell, Meeuwesen, & Huyse, 1991; Wu & Wu, 2008). It demonstrates

a client-centered approach by allowing the client to judge their life satisfaction based on their own criteria. Most importantly, findings presented in chapter 4 indicated a strong correlation between the person's and their significant other's scores. Therefore, in situations when the client is not capable of completing the questionnaire, relying on the client's proxy report might be feasible. One might say that the SWLS serves as a family-centered measurement as well.

Strengths and weaknesses

This study used a cross sectional design and therefore no cause and effect claim can be made. However, a rigorous method (structural equation modeling) was used to test a model that rests on a substantive theory. Thereby, it was possible to infer interdependency among the variables in the model and to test complex hypotheses. For example, one of the models suggests that well-being was dependent on the level of supported occupation (community) which in turn was dependent on the level of extraversion. Moreover, this method assured that the factorial structure of the latent variables in the model was valid. Certainly, alternative models which view the relationship between occupational imbalance and well-being from different perspectives/while taking into account additional constructs might exist.

It is important to note that the proposed theoretical model presents an integrative perspective on the relation between occupation and well-being based on various theoretical approaches. It links assumptions from different fields and closely related concepts to better understand the effect of occupation on well-being. Consequently, it presents a broad perspective on occupation and well-being. At the same time, this study addressed only the cognitive aspect of well-being, i.e., life satisfaction, rather than the affective aspect, i.e., mood.

Clearly, as this study is based on a convenience sample, it does not represent the Israeli population in terms of SES, for instance. Thus, its generalizability is limited. Indeed the Israeli context and its political climate need to be considered while interpreting the results. As discussed broadly in chapter 5, the concept of stress, derived from the PPA, might be perceived differently among Israelis. However, the SWLS was

found appropriate to the Israeli context (manuscript 3) suggesting a mean which falls within the scale's normative data.

This study aimed to capture the participants' point of view regarding their occupation and occupational imbalance. At the same time participants appraised their occupations based on memory which might have biased the results. Future studies might consider using an experience sampling method which can randomly examine occupations in real time.

Although this study failed to explain the effect of occupational imbalance, measured by the rated impact of the occupations on each other, on well-being, it examined this concept systematically and yielded new directions for measuring it in congruence with innovative theories. Moreover, this concept is a multi-layered construct with little consensus on its definition. Backman and Anaby (in press) documented a broad research agenda for future systematic inquiry of the concept drawing on ideas raised at the International Life Balance Conference held in Kingston, Ontario in 2007. Undoubtedly, it is still an evolving concept which is abstract and thus elusive, and some might even say it is a metaphor (Bickenbach & Glass, in press).

Summary

This study has proposed and tested a conceptual model for explaining well-being from an occupational perspective. More specifically, it explores the role of personality, occupational characteristics and occupational imbalance in affecting well-being. The study's general hypothesis was partially confirmed where occupational characteristics act as mediators between personality and well-being, whereas occupational imbalance did not.

Three key messages are derived from this dissertation: 1) **occupational balance is a two dimensional concept** – where facilitation (i.e., balance) and interference (i.e., imbalance) among occupations co-exist, and thus each should be measured separately using a unipolar scale; 2) **personality is not enough to explain well-being** - in many cases, personality traits affected well-being only in the presence of occupational characteristics, and 3) **the *what* is more important than the *how*** - the quality of the

occupations one engages in, rather than the way one balances them, is more important to explain well-being.

These key findings provide an essential contribution for the study of occupation and well-being both theoretically and clinically. This contribution might be also notable in advocating environments that support occupation and hence well-being, and in further recognition of the interdisciplinary field of occupational science. In addition, this dissertation illuminates the concept of occupational balance, adding one more piece of knowledge to the elusive and multi-layered nature of the concept. Finally, the study emphasizes the importance of the characteristics of the occupations to well-being as opposed to the balance of these occupations. Thereby, it paves the way for new lines of inquiry for viewing occupational balance, which are in line with very recent approaches and innovative definitions.

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Appendix 1 – Tel-Aviv university research ethics board certificates



28 January, 2009

Mrs. Dana Anaby
Sackler School of Medicine
Tel – Aviv University
Ramat Aviv, Tel Aviv 69978
Israel

Dear Mrs. Anaby

This is to inform you that your research proposal entitled:

"Well-being from an occupational perspective – testing
a conceptual model"

meets the requirements of the Helsinki Committee of Tel-Aviv
University.

The investigator's information: the document is for ethical purposes only.

Sincerely,

Prof. Isaac Ben-Bassat
Chairman, Helsinki Committee (I.R.B)
Tel-Aviv University

TEL-AVIV UNIVERSITY
INSTITUTIONAL REVIEW BOARD

קריית האוניברסיטה, ת"ד 39040, רמת אביב, תל אביב 69978. טלפון: 03-6408778, 03-6409673, 03-6408778 :079
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Appendix 2 – Personal project analysis[©]

Module 1:

Project Elicitation

We are interested in studying the kinds of activities and concerns that people have over the course of their lives. We call these *personal projects* or *occupations*. All of us have a number of occupations at any given time that we think about, plan for, carry out and sometimes (though not always) complete.

Some occupations may be focused on achievement (“*Getting my degree*”) others on the process (“*Enjoying a night out with friends*”); they may be things we choose to do or things we have to do; they may be things we are working towards or things we are trying to avoid. Occupations may be related to any aspect of your daily life, university, work, home, leisure and community, among others. Please think of occupations in this broad way.

Some examples of personal projects/occupations

Pass my psychology course

Hand my boss the annual report on time

Plan my sister 50th birthday party

Redecorate my bedroom /Renovate my kitchen

Finish reading the novel/poems for the coming book club

Exercise more often

Help my son get along with others

Plan a family trip to the Galil

Prepare the agenda for the house committee meeting

Organize my CD's in the new book shelves

Get a job promotion

Loosing 10 pounds

Playing cards with co-workers

[©] Brian Little, Ph. D., 1983

We are also interested in finding out what you think and how you feel about these personal occupations and activities, how important or stressful they are, and so on.

To start, please take 10-15 minutes and write down on the following page(s) as many personal occupations and activities you can that you are currently engaged in or considering -- remember these need not be formal occupations or even important ones -- we would prefer you to give us more of the everyday kinds of activities or concerns that characterize your life at present.

[One to two pages of lined paper will be needed for the occupations elicitation]

Module 2

Project Rating Matrices and Dimension Definitions

Now select 10 occupations from your list that you feel are important to you or typical of your life and copy them onto the matrix on the next page. If you have many more than 10 such occupations, choose those that you expect to be actively working on in the next couple of months.

Once you have written in all 10 occupations **you may begin to rate each one from 0 - 10 on the series of dimensions listed along the top of the page.** If you feel a dimension is not relevant to an occupation, you may put an X in the space instead of a numerical rating, but please try to rate each occupation on all dimensions wherever possible.

In the following section of this questionnaire is a list of these dimensions and a more detailed explanation of what each one means. Please detach the list for easy reference and refer to it as needed while you rate your occupations.

What Do you think about what you are doing?

| | Occupations | Importance | Enjoyment | Difficulty | Visibility | Control | Initiation | Stress | Time Adequacy | Outcome | Self Identity | Other's View | Value Congruency | Progress | Challenge | Absorption |
|----|-------------|------------|-----------|------------|------------|---------|------------|--------|---------------|---------|---------------|--------------|------------------|----------|-----------|------------|
| 1 | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |

Note. Five mean scores are generated from this matrix to represent the five occupational characteristics: **Meaning** (important, enjoyment, self-identity, value congruency, absorption); **Structure** (control, initiation, time adequacy); **Stress** (difficulty, stress, challenge); **Efficacy** (progress, outcome) and **Community** (other's view, visibility).

Occupational Characteristics Definitions

- 1) Importance - How important is this occupation to you? (Use 10 if you consider it to be very important, and 0 if it is not at all important)
- 2) Enjoyment - How you enjoy working on each occupation? (use 10 if you enjoy it a great deal and 0 if you do not enjoy it)
- 3) Difficulty How difficult do you find it to carry out each occupation? (Use 10 for a occupation which is extremely difficult to carry out, and 0 for one that is not difficult at all.)
- 4) Visibility - How visible is this occupation to others that are close to you? (Use 10 for an occupation which is very visible to those around you, and 0 for an occupation which is not at all visible to those around you).
- 5) Control - How much do you feel you are in control of this occupation? (Use 10 if you feel completely in control of the occupation, and 0 if you feel you have absolutely no control over the occupation.)
- 6) Initiation - How much you feel responsible for having initiated each occupation? (Use 10 if you feel fully responsible for having initiated an occupation and 0 if you feel you have taken no part whatsoever in initiating an occupation)
- 7) Stress - How stressful it is for you to carry out each occupation?
(Use 10 if an occupation is very stressful to carry out and 0 if an occupation is very relaxing to carry out)
- 8) Time adequacy - How adequate is the amount of time you spend working on this occupation? (Use 10 if you feel the amount of time is perfectly adequate, and 0 if you feel that the amount of time you spend working on the occupation is not at all adequate.)
- 9) Outcome (Likelihood of Success) - How successful do you believe this occupation will be? (Use 10 if you expect the occupation to be entirely successful, and 0 if you think the occupation will turn out to be a total failure)

- 10) Self-Identity - All of us have things we do that we feel are typical or truly expressive of us. These things can be thought of as our "trade marks". For example, some people engage in sports every chance they get, others prefer to read, and others prefer to socialize. Think of what your own personal "trade marks" are, and then rate this occupation on the extent to which it is typical of you.
(Use 10 if an occupation is very typical of you, and 0 if it is not typical at all.)
- 11) Others' View of Importance - How important is this occupation seen to be by those people who are close to you? (Use 10 if an occupation is seen by others as very important and 0 if it is seen as not important at all.)
- 12) Value Congruency - To what extent is each occupation consistent with the values that guide your life? (Use 10 if an occupation is totally consistent with your values, and 0 if a occupation is totally at odds with them)
- 13) Progress - How successful have you been in this occupation so far?
(Use 10 to indicate that you have been very successful and 0 to indicate that you have had no success at all.)
- 14) Challenge - How challenging do you find this occupation? (Use 10 if it is very challenging, perhaps more than you can handle, and 0 if it is not at all challenging, indeed you find it almost boring).
- 15) Absorption - To what extent do you become engrossed or deeply involved in an occupation? (Use 10 if you generally get absorbed in an activity and 0 if you tend to be uninvolved when doing it).

Modules 3 - Cross Impact Matrix

On the matrix on the next page, please list your occupations down the left as you have done previously, but also along the top *in the same order*.

Now for each occupation separately, starting with occupation 1 on the left, decide whether the occupation will have (or is having) a positive (+1) very positive (+2), negative (-1) very negative (- 2) or neutral impact (0) on the remaining occupations (across the top).

Do the same for occupation 2, 3 etc. all the way to 10, filling in the blocks on both sides of the diagonal.

Remember, evaluating the impact of occupation 2 on occupation 3 is NOT necessarily the same as evaluating the impact of occupation 3 on occupation 2. That is why we want you to complete the entire matrix.

Try not to leave any blank boxes.

| Cross Impact Matrix | | | | | | | | | | | |
|---------------------|--|---|---|---|---|---|---|---|---|---|----|
| | Please list your occupations (briefly) Below (as you did in the earlier matrix) and also to the right (to form a grid) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |