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WELL-BEING AND WORK-RELATED STRESS

*MEASURES AND DYNAMICS TO IMPROVE INDIVIDUAL AND ORGANIZATIONAL
HEALTH*

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PART ONE

«If we except those miraculous and isolated moments fate can bestow on a man, loving your work (unfortunately, the privilege of a few) represents the best, most concrete approximation of happiness on earth. But this is a truth not many know».

The Wrench (Primo Levi, 1978)

«Se si escludono istanti prodigiosi e singoli che il destino ci può donare, l'amare il proprio lavoro (che purtroppo è privilegio di pochi) costituisce la migliore approssimazione concreta alla felicità sulla terra: ma questa è una verità che non molti conoscono».

La chiave a stella (Primo Levi, 1978)

PREFAZIONE

I cambiamenti verificatisi nel mondo del lavoro (e.g., la globalizzazione del mercato, la flessibilità lavorativa, il ricorso sempre più frequente a tecnologie complesse) hanno portato ad uno sconvolgimento così radicale che è possibile parlare di una vera e propria “rivoluzione” in grado di modificare oltre agli assetti organizzativi, anche gli atteggiamenti, i comportamenti e le aspirazioni delle persone verso il lavoro (Passerini & Tomatis, 1992). Si è, infatti, passati da un’economia fondata su materie prime, energia e lavoro ad una fondata su informazione e comunicazione, ma soprattutto su competitività e cambiamento continuo (Rifkin, 1995); questo stato di cose si ripercuote inevitabilmente sui lavoratori, ai quali sono richieste in maniera crescente nuove capacità e nuove competenze come prerequisito per una partecipazione significativa alla vita professionale (Sangiorgi, 2008). Conseguenza di tali mutamenti è, da un lato, la valorizzazione del ruolo che le risorse umane svolgono all’interno dell’organizzazione: le persone sono percepite come “motore del business” in quanto contribuiscono allo sviluppo dell’azienda e ne favoriscono la competitività rispetto al mercato e alla concorrenza. Dall’altro lato, però, vi è l’emergere di *nuovi rischi psicosociali*, ovvero quei rischi che nascono dall’interazione tra lavoro e lavoratore, e la cui peculiarità è quella di alterare in senso peggiorativo la salute psicofisica dei lavoratori (Ilo, 1986). Recenti dati Istat (Rapporto annuale Inail, 2009) evidenziano che, a differenza di pochi anni fa quando le patologie del lavoro erano prevalentemente a eziologia monofattoriale, oggi sono

sempre più in aumento le patologie definite stress-correlate di tipo aspecifico e a eziologia multifattoriale.

La maggiore sensibilità nei confronti dei rischi psicosociali si fonda, innanzitutto, sull'evoluzione del concetto di *salute* umana che diviene riferibile non soltanto alla tutela dell'integrità biologica dell'individuo, ma anche a quella psicologica e sociale (Avallone & Paplomatas, 2005). In secondo luogo, diviene sempre più concreta l'idea che le persone che si sentono bene, oltre a manifestare benefici a livello individuale, lavorano anche in modo più produttivo, incrementando così il livello complessivo del benessere organizzativo. Per tali ragioni, il benessere individuale diviene un importante elemento per migliorare l'efficacia aziendale (Argentero, Dell'Olivo, Setti, & Zanaletti, 2008).

Una delle principali cause di disagio all'interno delle organizzazioni è lo *stress lavorativo* che, nella sua accezione negativa, può essere definito come «una condizione, accompagnata da sofferenze o disfunzioni fisiche, psichiche, psicologiche o sociali, che scaturisce dalla percezione individuale di non essere in grado di rispondere alle richieste o di non essere all'altezza delle aspettative» (Accordo Europeo, 2004). In altre parole, lo stress va riscontrato nell'interazione, talvolta negativa, che si crea tra il lavoratore e i diversi aspetti dell'ambiente di lavoro; nello specifico, si manifesta quando le persone percepiscono uno squilibrio tra le richieste avanzate nei loro confronti e le risorse a loro disposizione per far fronte a tali richieste e diventa un rischio per la salute quando è prolungato nel tempo. È importante sottolineare «che una stessa persona può, in diversi momenti della propria vita, reagire in modo diverso a situazioni simili» e inoltre «tutte le manifestazioni di stress sul lavoro non vanno considerate come causate dal lavoro

stesso» (Accordo quadro europeo sullo stress lavoro-correlato, 2004). Non tutti i luoghi di lavoro o tutti i lavoratori ne siano interessati, ma può riguardare chiunque, a qualsiasi livello, in qualsiasi settore e qualsiasi sia la dimensione aziendale.

Da quanto detto finora, è evidente come lo stimolo d'innescare del processo dello stress sia costituito da certe caratteristiche dell'ambiente lavorativo che vengono percepite e valutate dal lavoratore (Fraccaroli & Balducci, 2011). Tali caratteristiche dell'ambiente lavorativo, in grado di alterare la salute dei lavoratori, sono rintracciabili nella natura e nelle caratteristiche del lavoro (ad esempio, monotonia dei compiti, ciclo di lavoro, carico di lavoro, ritmo di lavoro, pianificazione dei compiti), nonché nel contesto organizzativo e sociale del lavoro (ambiguità e conflitto di ruolo, comunicazione, sviluppo personale e professionale, insicurezza per il futuro, rapporti interpersonali). Inoltre, gli studiosi concordano sugli effetti a lungo e a breve termine che questo fenomeno può generare: a livello individuale si hanno principalmente conseguenze sul piano fisiologico, psicologico e comportamentale; a livello organizzativo, lo stress lavorativo può condurre ad esiti negativi in termini di conflittualità, minore produttività, assenteismo e turnover, fino ad arrivare a ledere l'immagine dell'azienda stessa (Le Blanc, De Jonge, & Schaufeli, 2008).

Recenti ricerche hanno messo in luce che la prevalenza del fenomeno dello stress è molto alta. Secondo l'European foundation (2007), il 35% dei lavoratori dell'Unione Europea ritiene che il lavoro abbia un impatto sulla propria salute e tra i sintomi di maggior rilievo viene annoverato lo stress lavoro-correlato (22,3% dei casi). In particolar modo, l'EU-OSHA (2009) ha stimato che una percentuale compresa tra il 50% e il 60% delle giornate lavorative perse in un anno è correlata

allo stress lavorativo. Ancora, secondo una ricerca condotta dall'European foundation nel 2005, la condizione di stress lavorativo coinvolge il 22% dei lavoratori in Europa, mentre in Italia il valore si attesta al 27%, poco sopra la media europea. Gli effetti dello stress hanno anche delle ricadute in ambito economico e sociale, basti pensare ad esempio ai costi sopportati dal sistema sanitario, assistenziale e assicurativo. A tal proposito, diverse ricerche hanno indagato la ricaduta economica dello stress lavorativo sulle aziende e sulle economie nazionali; ad esempio, nel 2002 l'Unione Europea ha stimato che, nei Paesi membri, il costo economico dello stress lavorativo è stato di circa 20 miliardi di euro.

Per tutti questi motivi, l'interesse verso il tema dello stress lavoro-correlato è in continuo aumento, come mostrano anche le recenti politiche nazionali ed europee atte a cercare di prevenire tale fenomeno. In particolar modo, con il decreto legge 81/08 sulla sicurezza viene introdotto anche nel nostro Paese l'obbligo per le aziende di condurre un'analisi dei rischi psicosociali; nello specifico, tale valutazione è finalizzata a determinare il livello di Rischio Stress Lavoro-Correlato (RSLC) e a programmare delle misure di prevenzione per la salvaguardia, la salute e la sicurezza dei lavoratori. Tuttavia, il percorso che dalla legge condurrà alla concreta applicazione della stessa nel nostro Paese è ancora in gran parte da definire. Molto è stato fatto, ma molto ancora deve essere fatto; infatti, molto dipenderà da come le organizzazioni recepiranno tale normativa e da quanto investiranno sul benessere organizzativo.

Una comprensione più approfondita dei processi psicosociali in gioco può fondarsi su diversi modelli teorici, alcuni dei quali hanno ricevuto diverse conferme empiriche. Tuttavia, essendo lo stress un fenomeno complesso, risulta ancora oggi

utile esplorare antecedenti e cause di tale fenomeno al fine di individuare altri possibili fattori d'influenza del benessere individuale e organizzativo.

Alla luce di quanto detto finora, l'obiettivo principale del presente elaborato è quello di esplorare il fenomeno dello stress lavoro-correlato, analizzando nuove misure ed esplorando possibili antecedenti ed effetti per l'individuo e per le organizzazioni; tale obiettivo è stato perseguito attraverso tre studi empirici di seguito presentati. Nello specifico, il presente elaborato è suddiviso in quattro capitoli.

Il primo capitolo si concentra sulla definizione dello stress lavoro-correlato e sulla esposizione della vigente normativa in tema di salute e sicurezza sui luoghi di lavoro. Sono, inoltre, passati in rassegna i principali modelli teorici che si sono succeduti nel corso degli anni al fine di identificare le caratteristiche personali e lavorative in grado di influenzare il benessere.

Il secondo capitolo introduce il concetto di benessere affettivo sui luoghi di lavoro e si concentra sull'introduzione nel panorama italiano di uno strumento in grado di misurare tale aspetto del benessere. Nello specifico, scopo del presente capitolo è quello di analizzare le proprietà psicometriche della versione italiana della scala a 12 item proposta da Warr (1990a) al fine di poter verificare se e con quali modalità lo strumento possa trovare applicazione anche nel contesto italiano.

Il terzo capitolo si concentra sull'analisi dello stress lavorativo in un gruppo di lavoratori afferenti al settore dei servizi allo scopo di comprendere se gli stati emotivi sperimentati sul luogo di lavoro possano mediare la relazione che intercorre tra le caratteristiche del lavoro e gli esiti del processo dello stress.

Il quarto capitolo, infine, si concentra sul fenomeno dello stress lavoro-correlato tra un gruppo di imprenditori di microimprese. L'obiettivo principale dello studio è quello di individuare i fattori legati al successo aziendale, partendo dall'ipotesi che un elevato stress dell'imprenditore sia legato ad una più bassa performance aziendale.

Infine, l'elaborato viene corredato di una conclusione generale che integra e illustra i principali risultati dei tre studi empirici, fornendo considerazioni metodologiche, suggerimenti per le ricerche future e implicazioni pratiche.

INTRODUCTION

Occupational stress is considered to be one of the ten leading work-related health problems. Several research (e.g., Ilies et al., 2011; Sonnentag & Frese, 2010) showed that stress consequences have a negative impact on the worker physically (e.g., headaches, cardiovascular disease), psychologically (e.g., depression, low self-esteem, burnout) behaviourally (e.g., alcohol use, smoking), and organizationally (e.g., absenteeism, turnover, low productivity). Moreover, in the last years, many studies have shown that the work environment can have a major effect on employee work-related stress. For this reason, occupational health psychology is increasingly focused on identifying the relationships between job characteristics and psychological well-being.

Based on the relevance of this topic, the aim of this dissertation is to explain the work-related stress phenomenon, considering its measures, its potential antecedents in working contexts and its consequences for individuals and organizations. These objectives have been pursued by means of three empirical studies presented in the three chapters respectively.

Chapter 1 focuses on defining of work-related stress. In particular, it begins with an outline of work-related stress as a social problem, followed by a discussion of the main theoretical models that have succeeded over the years in order to identify specific job and personal characteristics linked with work-related stress.

Chapter 2 focuses on job-related affective well-being measure, since little attention has been given to the phenomenon and to instruments to measure it for research purposes so far. Specifically, the psychometric properties of Warr's 12-item scale (Warr, 1990a; 1996), in its Italian version, have been examined.

Chapter 3 focuses on analyzing the work-related stress of employees in service sector. Specifically, the study aims at understanding whether positive and negative affect can mediate the relation between job demands-negative outcomes and job resources-positive outcomes respectively.

Chapter 4 focuses on phenomenon of work-related stress among entrepreneurs of microenterprises. In particular, the main goal of the study is to understand which factors lead to business success and which lead to failure.

Finally, general conclusion integrates and discusses the key findings of the three studies providing methodological considerations, suggestions for future research and practical implications.

The Chapter 2 and Chapter 3 of the current dissertation have been written with the supervision of the Prof. Marc Van Veldhoven, on the basis of the work carried out during the months spent at the Tilburg University.

CHAPTER 1

Defining work-related stress.

During the past decades, the constant and rapid changes that occurred in the world of work – such as globalization of economic activities, increased utilization of information and communication technology, flexible work arrangements, and changed organizational work patterns - have changed dramatically the workplace. New jobs and new types of companies have arisen, leading to an increase in knowledge and service-based organizations. However, the most striking developments are concerning with: (a) the changing nature of work itself; (b) increased workloads; (c) increased value of human resources management within the organizations; and (d) increased prevalence of new and emerging types of risk to workers' health and safety (De Jonge & Kompier, 1997; EU-OSHA, 2009; INAIL, 2010; Le Blanc, De Jonge, & Schaufeli, 2008).

The new challenges for occupational safety and health are psychosocial risks, which represent also a key priority in the modern workplace in Europe; in fact, a number of actions have been taken in the EU policy arena to promote the management of psychosocial risks at national as well as organizational levels. *Psychosocial risks* in the workplace can be defined as “those aspects of work design and the organisation and management of work, and their social and environmental contexts, which have the potential for causing psychological, social and physical harm” (Cox & Griffiths, 1995). They have a cross action in all occupational sectors

and job roles and they can have an effect both direct and indirect on health (Fraccaroli & Balducci, 2011). In detail, the work-related psychosocial risks are linked to problems such as work-related stress and workplace violence, harassment and bullying. In the present dissertation we focused on work-related stress that is considered to be one of the ten leading work-related health problems.

Prevalence and Impact

According to recent figures, the prevalence of job stress is high. The European Working Conditions Survey (EWCS) carried out in 2000, found that job stress is the second most common job-related health problem across the EU Member States (28%; EFILWC, 2005). Moreover, a survey conducted by the International Labor Organization (ILO) in five countries (Finland, Germany, Great Britain, Italy, the United States) estimated that one adult in five suffered from depression, anxiety, stress or overwork (ILO, 2000). The Fourth European Working Conditions survey, carried out in 2005, indicated a reduction in stress levels reported overall for the EU-27; however the reduction in reporting of exposure to stress occurred mainly in some of the EU-15 countries, while new Member States still reported high levels of exposure – over 30 % (EU-OSHA, 2009). In fact, 20% of workers from the first 15 EU Member States and 30% from the 12 new Member States also believed that their health was at risk because of work-related stress (Eurofound, 2007).

The World Health Organization (WHO, 2000) has noted that “Occupational health and the well-being of working people are crucial prerequisites for productivity and are of utmost importance for overall socioeconomic and sustainable development” (p. 2). In fact, the economic impact of stress disorders on industry is

well over US \$150 billion due to decreased productivity, absenteeism and disability. In particular, EU-OSHA survey (2009) estimated that between 50% and 60% of all lost working days have some link with work-related stress leading to significant financial costs to companies as well as to society in terms of both human distress and impaired economic performance. Moreover, at the national level, the same survey reported that the economic costs of work-related stress illnesses in France were between EUR 830 million and EUR 1,656 million, while in Germany, the cost of psychological disorders was estimated to be EUR 3,000 million. Moreover, work-related stress, depression or anxiety accounted for an estimated 11.4 million lost working days in Britain (HSE, 2010), costing employers around EUR 571 million and society as a whole as much as EUR 5.7 billion.

For all these reasons, the interest in the phenomenon of work-related stress has increased markedly during the last few years, as indicated by several reviews of the literature, a number of books, and a rash of public seminars promoting different approaches to stress control. But what is the work-related stress?

Definition

A large number of disciplines with different perspectives is involved in stress research, such as biology, psychology, sociology, and engineering. For these reason, in the past years there was a lack of agreement on the definition of stress. In general, *stress* refers to external pressure that is exerted on a person, which in turn results in tension or “strain” (Kahn & Byosiere, 1992). In recent years, the European agreement (2004) defined stress as “a state which is accompanied by physical, psychological or social complaints or dysfunction and which results from individuals

feeling unable to bridge a gap with the requirements or expectations placed on them”. Thus, it is an adverse reaction people have to excessive pressures or other types of demand placed upon them. Within certain limits, people are able to deal with this pressure and adapt to the situation, and to recover when the stressful period is over, but there will be greater difficulty in coping with prolonged intensive pressure. Stress is not a disease, but it can lead to a reduced ability to perform at work and have an impact on a person’s health and well-being. A key point to recognise is that individuals will react differently to pressure in different situations and at different stages in their working lives. Nevertheless, stress at work is linked to the way work is designed, organized and managed, as well as to its economic and social context.

The current literature defines work-related stress as “a pattern of reactions that occurs when workers are presented with work demands that are not matched to their knowledge, skills or abilities, and which challenge their ability to cope” (Eurofound, 2010; NIOSH, 1999). When the worker perceives an imbalance between demands and environmental or personal resources, this can cause a number of possible reactions. These may include physiological responses, emotional responses, cognitive responses, and behavioural reactions. When people are in a state of stress, they often feel concerned, less vigilant and less efficient in performing tasks.

The stress process can be summarised in a model (Figure 1.1) that illustrates the causes of stress, (short-term) stress reactions, long-term consequences of stress, and individual characteristics, as well as their inter-relations.

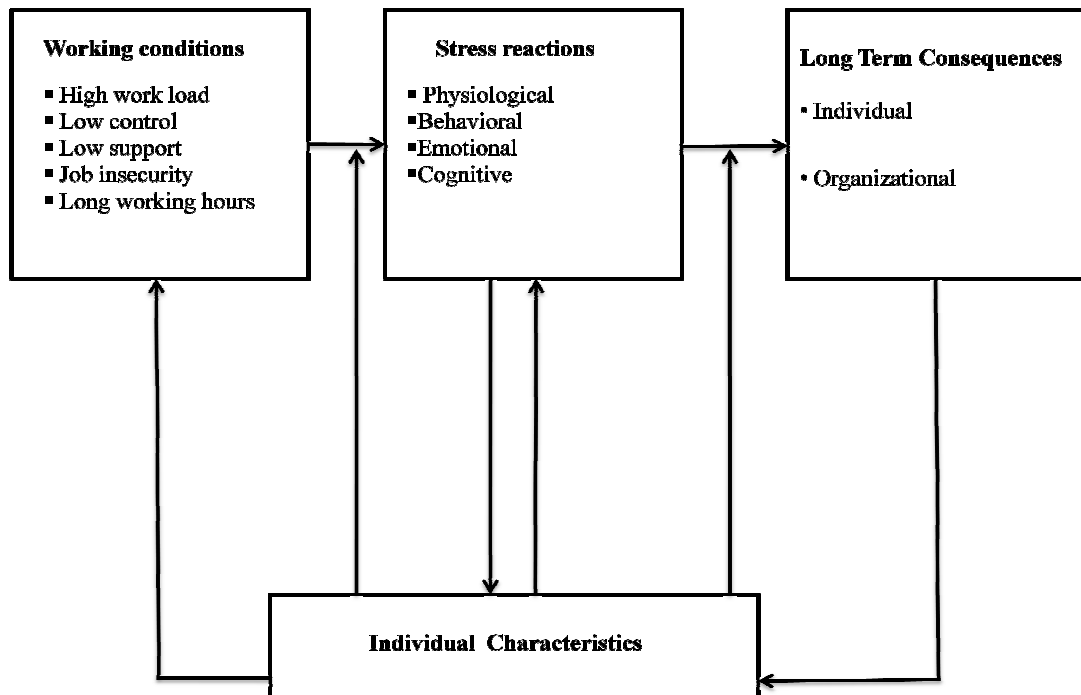


Figure 1.1. The stress process.

Thus, the stress is an internal state that covers both the physical and psychological reactions and it is part of an interaction process between job demands, job resources, and personal characteristics (EU-OSHA, 2000). It is important to note that the trigger stimulus is always certain job characteristics that are perceived and evaluated from employees. Moreover, the personal characteristics play an important role in this process. In detail, individual characteristics - such as personality, values, goals, age, gender, level of education, and family situation - influence one's ability to cope and they may interact with risk factors at work and either exacerbate or alleviate their effects (Fraccaroli & Balducci, 2011).

Finally, most researchers in the field of stress do agree that three different meanings of term stress can be distinguished: stress as a stimulus (stressor), stress as

response (outcome), and stress as a mediational process between stressor and outcomes (Kahn & Byosiere, 1992; Semmer, 2003).

Causes and Effects

There are many potential individual and organizational consequences of high or low levels of work-related stress. As mentioned above, the literature emphasized that organizational stress is not only detrimental for individuals' health and well-being, but it can also harm the organizations. Empirical evidences supported this statement: work-related stress can lead to emotional reactions (irritability, emotional withdrawal, anxiety, sleep problems, depression, burnout; Hu, Schaufeli, & Taris, 2013), cognitive reactions (difficulty in concentrating, remembering, making decisions, decreased creativity; Van Der Linden, Keijsers, Eling, & Van Schaijk, 2005), behavioural reactions (abuse of drugs, alcohol, and tobacco; destructive behaviour, loss of motivation; Plant, Plant, Foster, 1992), and physiological reactions, (weakened immunity, peptic ulcers, heart problems, or hypertension; Steptoe & Kivimäki, 2012). There are also hidden consequences for organizations, for example counterproductive behavior, absenteeism, turnover, conflicts, disturbed relations, losses in the domain of image, productivity, and quality of services (Balducci, Schaufeli, & Fraccaroli, 2011).

In the last years, many studies have shown that the work environment can have a major effect on employee work-related stress; for instance, low levels of skill utilization and decision authority (e.g., de Jonge, Reuvers, Houtman, Bongers, & Kompier, 2000); physical demands related to the environment and individual effort (Demerouti, Bakker, Nachreiner, & Schaufeli, 2000); psychological and emotional

demands (van Gelderen, Benjamin, Konijn, & Bakker, 2011); irregular schedules and long hours (Van der Hulst, Van Veldhoven, & Beckers, 2006); weak social support (Janssen, Bakker, & De Jong, 2001) and physical, sexual and psychological harassment (McDermut, Haaga, & Kirk, 2000); low rewards (Tepper, 2000). For this reason, occupational health psychology is increasingly focused on identifying the relationships between job characteristics and psychological well-being.

Legal framework: the European agreement on work-related stress

Work-related stress became an increasing concern in the EU during the 1990s. Thus, the growing awareness, the introduction of measures to prevent it in some Member States, and expert work at EU level led to raising the question of a specific EU initiative to address it. In line with this trend, on 8 October 2004, ETUC (and the liaison committee Eurocadres-CEC), BUSINESSEUROPE (then UNICE), UEAPME and CEEP signed their second autonomous *framework agreement* on work-related stress. In particular, the aim of the agreement is “to increase the awareness and understanding of employers, workers and their representatives of work-related stress, and to draw their attention to signs that could indicate problems of work-related stress”.

Moreover, the agreement suggests that stress can potentially affect any workplace and any worker, irrespective of size of the company, field of activity or form of employment contract or relationship, although it is recognised that not all work places and not all workers are necessarily affected by work-related stress. It can harm the efficiency and lead to poor occupational health and safety, with consequent economic and social loss for companies, workers and society as a whole. The

agreement is based on the recognition that work-related stress can be caused by various factors, such as work organization and processes (working time arrangements, degree of autonomy, match between workers skills and job requirements, workload, etc.), working conditions and environment (exposure to abusive behaviour, noise, heat, dangerous substances, etc.), communication (uncertainty about what is expected at work, employment prospects, or forthcoming change, etc.), and subjective factors (emotional and social pressures, feeling unable to cope, perceived lack of support, etc.).

In addition, its objective is “to provide employers and workers with a framework to identify and prevent or manage problems of work-related stress”. It acknowledges that when a problem of work-related stress is identified, action must be taken to prevent, eliminate or reduce it and defines the reciprocal responsibilities of employers and workers in this context. To that end, it proposes an action-oriented framework to help employers, workers and their representatives to develop both collective and individual measures, which better respond to the challenges posed by work-related stress.

Addressing problems of work-related stress may be carried out within an overall process of risk assessment, through a separate stress policy and/or by specific measures targeted at identified stress factors. In particular, preventing, eliminating or reducing problems of work-related stress can include various measures. These measures can be collective, individual or both. They can be introduced in the form of specific measures targeted at identified stress factors or as part of an integrated stress policy encompassing both preventive and responsive measures. Once in place, anti-stress measures should be regularly reviewed to assess their effectiveness, if they are

making optimum use of resources, and are still appropriate or necessary. Finally, all employers have a legal obligation to protect the occupational safety and health of workers. This duty also applies to problems of work-related stress in so far as they entail a risk to health and safety. All workers have a general duty to comply with protective measures determined by the employer.

Leg. 81/2008

Italy implemented the agreement through an “Interconfederal agreement” (*accordo interconfederale*) concluded on 9 June 2008. Following the indications of the European Framework Agreement, it contains all the provisions of the European text including the implementation provisions. However, it is based on common law and is therefore not enforceable *erga omnes*, but it is binding on employers and workers belonging to the signatory associations; it is also binding on other workers and employers who explicitly sign the agreement, or incorporate its content into individual employment contracts (SEC, 2011).

In the same year, the occupational health and safety legislation in Italy was revised enacting the Legislative Decree of 9/04/2008 n. 81. This explicitly introduces the obligation for private and public employers to include in the risk assessment “all risks to safety and health of workers, including those groups of workers exposed to special risks, including those related to work-related stress, according to the European agreement of 8 October 2004” and to take measures accordingly. The health becomes a resource for everyday life, not the object of living, and a positive concept emphasizing social and personal resources as well as physical capabilities. It is also an essential component of development and it is a fundamental human right,

recognized in the Universal Declaration of Human Rights (1948). In fact, it is defined as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1948). Thus, it refers to a functional optimum of all life’s manifestations of an individual and his organism – biological, psychological, and social – which depends on many internal and external factors and may reach various levels (Argentero, Dell’Olivo, Setti, & Zanaletti, 2008; Avallone & Paplomatas, 2005). Moreover, individual and organizational are now considered interdependent and management has a responsibility for individual and organizational health.

This article was later integrated and modified with the legislative decree of 3 August 2009, n 106 stipulating that the assessment of psychosocial risks has to be done in line with guidelines developed by the Permanent Consultative Commission for Health and Safety at Work. It worked on the guidelines writing an Operational Guide for the Evaluation and Management of Risk of Work-Related Stress in 2010¹. The National Institute for Occupational Safety and Prevention (Ispesl²) also issued a Methodological Proposal for the Assessment of Work-Related Stress. The combination of these instruments covers all provisions of the agreement and its action-oriented framework. More in detail, these documents identify two steps: (a) Required assessment; (b) Additional assessment.

The first one has to contain the objective work-related stress indicators, such as sickness absence, turnover, and injury. Furthermore, it has to examine work

¹ Ministerial circular of 18/11/2010, n. 15 and official communicate of 30/12/2012, n. 304.

² The Italian Workers’ Compensation Authority, as well as regional authorities that are responsible for occupational health policies and inspection.

content and work context. A checklist³ containing an objective assessment and, as far as possible, parametric indices can be used. In this step, only representative sample workers can be involved with the assessment. If the checklist highlights low work-related risk factors, the employer will have to provide only for a monitoring plan. On the other hand, if the checklist highlights work-related risk factors, the employer will have to put in practise the corrective actions. At the end of this step, it will have to proceed to the next step.

In the additional step is required the workers subjective perception enclose in homogeneous groups. Questionnaires, focus groups, and semi-structured interviews can be used. Finally, the documentation relating to the risk assessment (Documento di Valutazione dei Rischi, DVR) must contain the following: results of the hazard assessment; prevention and protection measures to be taken as a consequence of the risks identified; deadlines, roles and responsibilities for their implementation and results of the review of the effectiveness of the protection measures.

Understanding the work-related stress: the theoretical models

As mentioned in the previous paragraphs, work-related stress is a complex phenomenon defined by the interaction between a person's cognitions, emotions, and behaviors and social environment. For this reason, it needs to be based on theoretical models that, reducing the complexity and variation of interactions between the work environment and the working person, focus their attention on those general

³ Checklists are comprehensive lists of environmental effects and impact indicators designed to stimulate the analyst to think broadly about possible consequences of contemplated actions.

components that may explain direct or indirect effects of work-related stress on health. During the years, several models have been developed and tested (e.g., Le Blanc, De Jonge, & Schaufeli, 2008; Sonnentag & Frese, 2012). In this section we discuss only the most important theoretical models on work-related stress, i.e., the Job Demand-Control Model (Karasek, 1979), the Vitamin model (Warr, 1990a, b), and the Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

Job Demand-Control Model

In 1979, Robert Karasek introduced a theoretical model to explain the impact of adverse job characteristics on health and well-being, the Job Demand-Control (JDC) model. In the following years, the model was expanded introducing social support as a further fundamental characteristic of the work environment and it was named the Job Demand-Control-(Support) (JDCS) model (Johnson & Hall, 1988; Johnson, Hall, & Theorell, 1989).

More in detail, the JDC/JDCS model postulates that the primary sources of stress lie within two basic job characteristics: job demands and job control. *Job demands* are typically operationalized in terms of qualitative and quantitative aspects such as workload, time pressure, and role conflicts (Karasek, 1985; van der Doef & Maes, 1999). *Job control* (also termed decision latitude) refers to the extent to which a person is capable of controlling their tasks and general work activity. In particular, job control is subdivided into two major aspects: skill discretion (i.e., person's opportunity to use specific job skills in the working process) and decision authority

(the extent to which a person is autonomous in task-related decisions; Häusser et al., 2010).

A central hypothesis of the model is that job demands and job control affect two psychological mechanisms: the first one influences the health of employees, while the other one influences the work motivation and learning behavior of the employees. In detail, strain will be highest in jobs characterized by the combination of high job demands and low job control. Such jobs, in which there is the highest risk of illness and reduced well-being, are called “high-strain jobs”. On the contrary, in jobs low on demands and high on control (“low strain jobs”), the occurrence of adverse reactions is rather unlikely. In addition, motivation, learning, and personal growth will occur in situations where both job demands and decision latitude are high. Thus, Karasek has labelled “active-learning jobs” those in which employees are expected to use all available skills, enabling a conversion of aroused energy into action through effective problem solving. In the opposite situation are jobs characterized by low demands and low control (“passive jobs”).

As mentioned above, the JDC model was extended through the integration of social support at the workplace as a third dimension. This new model (JDSC; Johnson & Hall, 1988) strongly follows the predictions of the Karasek’s model, assuming that the strain hypothesis of the JDC model will especially apply under conditions of low support.

Regarding the relationship between job characteristics and well-being, two main hypotheses were drawn: (a) the *strain hypothesis* focuses on an increased likelihood of mental or physical illness and reduced well-being for individuals working in “high strain jobs” (b) the *buffer hypothesis* refers exclusively to an

interactive effect of demands and control, in which control is predicted to attenuate the negative impact of job demands on well-being (De Lange, Taris, Kompier, Houtman, & Bongers, 2003). Several studies have tested these two hypotheses in order to prevent strain among employees and identify different organizational interventions. However, the results were inconsistent. For example, van der Doef and Maes's (1999) review showed that only 28 of 41 studies examining the relationship between job characteristics and psychological well-being supported the strain hypothesis. They reported comparable results for other outcomes. Moreover, Taris (2006) showed that only 9 out of 90 tests provided support for the demand x control interaction effect. Nevertheless, the JDC/JDCS model has acquired a prominent position in the literature and it has dominated the empirical research on job stress and health for many years.

Vitamin Model

Warr (1987) developed his framework of well-being that can be perceived as a reaction and an addition to the Karasek model. In particular, his researches were based on two previous theoretical models: (a) the Michigan model, which assumes a general causal sequence from organizational characteristics via stressors leading to stress reactions and illness; and (b) the Person-Environment (P-E) Fit model, which is based on the premise that interaction between environmental variables and relevant properties of a person determines work-related stress reactions. In particular, in so-called *Vitamin Model* (VM), Warr (1987, 1994) distinguishes five components of well-being (affective well-being; competence; autonomy; aspiration; and integrated

functioning), but psychological research mainly focuses on *affective well-being* as an indicator of job-related mental health.

Central features of Vitamin Model are: (a) comprehensive description of the mental health concept; (b) the curvilinear relations between job characteristics and mental health; (c) the differential effects of specific job characteristics and the influence of personal characteristics. These central features will be discussed briefly below. According to the author, the job-related affective well-being is made up of two orthogonal dimensions of pleasure and arousal. In addition, two separate axes were located diagonally: anxiety-to-comfort and depression-to-enthusiasm (see Figure 1.2). Warr suggests that different job characteristics are associated with these dimensions in different ways. For instance, job demands are supposed to be more strongly associated with the anxiety-comfort dimension, while job autonomy would be more closely related with depression-enthusiasm. Differential associations have indeed been found in several studies examining the Vitamin Model (Warr, 1990a; De Jonge, Mulder, & Nijhuis, 1999; De Jonge & Schaufeli, 1998). More details will be provided in the next chapter.

Another central element of the Vitamin Model is the assumption of a curvilinear relation between the job characteristics and well-being and other mental health outcomes. In particular, Warr (1987) suggests that mental health is affected by environmental psychological features - such as job characteristics - in a way that is analogous to the non-linear effects that vitamins are supposed to have on our physical health.

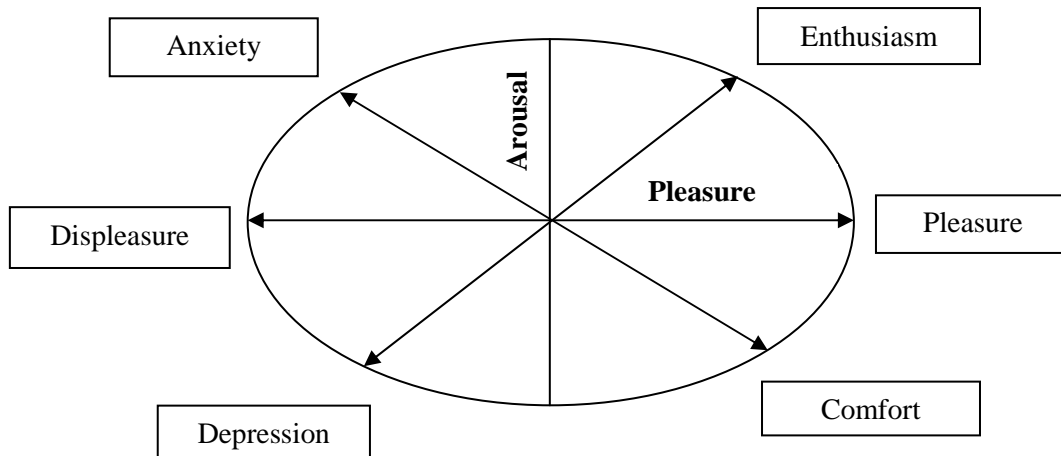


Figure 1.2. Three principal axes for the measurement of job affective well-being.

Specifically, at first vitamin consumption causes positive health effects, but beyond a certain level there is no further improvement, or even decrement. In the same way, the presence of job characteristics initially has a beneficial effect on employee mental health, whereas their absence impairs mental health. However, they show beneficial effects up to a certain point beyond which the effects indeed become detrimental and impair mental health. In other words, for most job characteristics there is an optimal level, while at both ends of the distribution the effects on well-being and health are hypothesized to be unfavourable (see Figure 1.3).

Anyway, the type of effect depends upon the particular job characteristic under consideration. On the basis of the literature, Warr (1987, 1994) came up with several features of jobs that act as potential determinants of job-related mental health, i.e., availability of money; physical security; valued social position; supportive supervision; career outlook; equity; opportunity for personal control; opportunity for skill use; externally generated goals; variety; environmental clarity; contact with

others. The first six work characteristics have a constant effect on mental health (i.e., the level of these work characteristics is beneficial up to a certain point, after which any further increase in supply of these work vitamins has no effect on mental health); the last six work characteristics have an additional decremental effect on mental health (i.e., after a certain level, an increase in the supply of these work characteristics will have unfavourable consequences on mental health). However, in later studies, Warr (1994) suggested that the proposed curvilinear relation could vary across different kinds of mental health outcomes; therefore, it depends upon the particular kind of variables being studied.

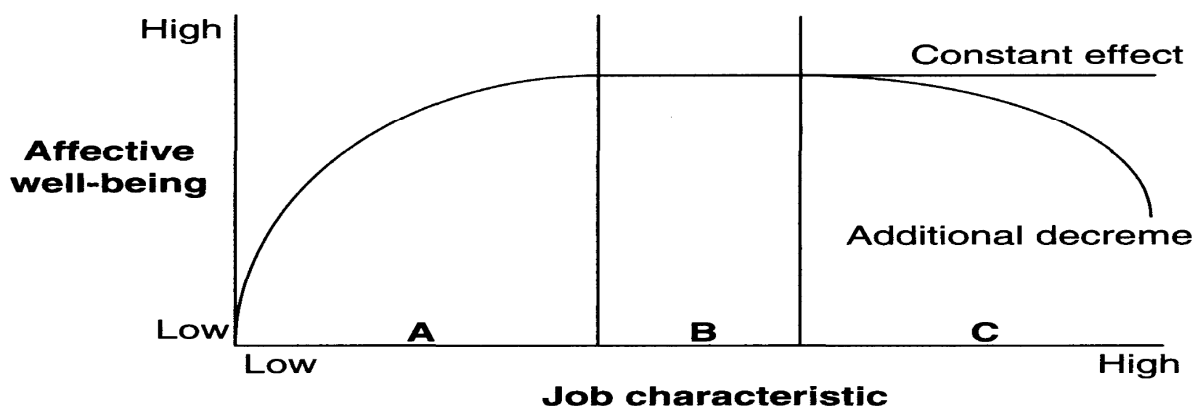


Figure 1.3. The Vitamin Model.

Regarding the final central feature of the Vitamin Model, Warr (1987, 1994) stated that there are undoubtedly differences between people in the nature of the

associations between job characteristics and well-being. In particular, there are three major categories of individual characteristics that could have effects on the studied relationships: values, abilities, and baseline mental health; they might act as both mediating and moderating factors.

During the years, several studies have investigated the proposed patterns of the Vitamin Model (e.g., Fletcher & Jones, 1993; De Jonge, Schaufeli & Furda, 1995; Parkes, 1991; Warr, 1990b; Xie & Johns, 1995) but the results are inconsistent (De Jonge, Reuvers, Houtman, Bongers, & Kompier, 2000). Regarding job autonomy, a curvilinear association was shown with job satisfaction. For instance, in a study with 1686 employees, Warr (1990a) found that job demands had non-linear associations with job satisfaction, job anxiety-comfort, and job depression-enthusiasm. Regarding job autonomy, a curvilinear association was only shown with job satisfaction (Warr, 1990b). Moreover, in a study with 1437 health care workers, de Jonge and Schaufeli (1998) found curvilinear relations between job demands and anxiety, and between social support and both job satisfaction and emotional exhaustion. However, they found a reversed U-shaped relation between job autonomy and emotional exhaustion. Finally, Jeurissen and Nyklíček (2001) found that job autonomy and job demands were only linearly associated with health and well-being indicators among 162 health care workers.

Effort-Reward Imbalance Model

Another model that received many attentions by several researchers was the Effort-Reward Imbalance (ERI) model (Siegrist, 1996a). Essentially, the model is based upon the *principle of reciprocity* and, in particular, it assumes that job stress is

the result of an imbalance between effort and reward. Specifically, *effort* is evaluated as two components: extrinsic effort or job demands, and intrinsic effort or overcommitment (that is defined as a set of attitudes, behaviors and emotions reflecting excessive striving in combination with a strong desire of being approved and esteemed). On the other hand, *rewards* are provided in terms of money, esteem, and career opportunities including job security.

According to the model, the experience of a lack of reciprocity in terms of high “costs” and low “gains” (for example, feelings of not being appreciated in an adequate way or of being treated unfairly and disappointments resulting from inappropriate rewards) elicits negative emotions in exposed people in the same way of sustained strain reactions in the autonomic nervous system. The recurrent experience of reward deficiency in a core social role impairs successful self-regulation (Siegrist, 2000). Thus, in the long run, the imbalance between high effort and low reward at work increases illness susceptibility as a result of continued strain reactions.

A final assumption concerns individual differences in the experience of effort–reward imbalance. For instance, the overcommitment could be considered a psychological risk factor in its own, even in the absence of structural conditions of imbalance at work. Indeed, people characterized by a motivational pattern of overcommitment may expose themselves more often to high demands at work, or they exaggerate their efforts beyond what is formally needed; as a result, their susceptibility to the frustration of reward expectancies is increased (Siegrist, 2008) and they are at increased risk of strain. However, the proposed model posits that strongest effects on health and well-being are expected to occur if structural and

personal conditions act in concert. Thus, overcommitment is hypothesized to modify (i.e., increase) the effect on health produced by effort–reward imbalance at work.

In summary, the proposed theoretical model is based on the sociological hypothesis that formalized social exchange is rooted in contracts of reciprocity of cost and gain. In addition, unlike the JDCS, the ERI model introduces a personal component (overcommitment) in the model as well; personality is expected to be able to further qualify the interaction between effort and reward.

There were several empirical evidences in this area (e.g., De Jonge, Bosma, Peter, & Siegrist, 2000). For instance, the combination of high effort and low reward at work was found to be a risk factor for cardiovascular health, subjective health, mild psychiatric disorders and burnout (for reviews, see Tsutsumi & Kawakami, 2004; Van Vegchel, De Jonge, Bosma, & Schaufeli, 2005).

Job Demands-Resources Model

The growing awareness regarding the job stress has allowed a number of researchers (e.g., see Schaufeli & Taris, 2014, for an overview) to argue that the most widely used models of work stress presented above (i.e., the JDCS and the ERI model) may have limitations in capturing the new, complex, and often context-specific determinants of job stress and occupational well-being. In an attempt to meet these criticisms, a new model of work stress has been recently introduced: the Job Demands-Resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). JD-R argues that whereas every occupation may have its own job characteristics and, therefore, specific risk factors associated with job stress; however, these factors can be classified in two general categories (i.e., job demands

and job resources). *Job demands* refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with certain physiological and/or psychological costs (Demerouti et al., 2001). Examples are a high work pressure and emotionally demanding interactions with clients. *Job resources* refer to those physical, psychological, social, or organizational aspects of the job that are either/or: (1) functional in achieving work goals; (2) reduce job demands and the associated physiological and psychological costs; and (3) stimulate personal growth, learning, and development (Bakker & Demerouti, 2007).

A central hypothesis in the JD-R model is that many different combinations (interactions) of specific job demands and specific job resources determine employee well-being (Bakker & Demerouti, 2007). In detail, it highlights that the combination of high demands and low resources produces the highest levels of burnout, whereas the combination of high demands and high resources produces the highest levels of motivation (Schaufeli & Bakker, 2004). Therefore, employee health and well-being result from a balance between positive (resources) and negative (demands) job characteristics. In addition, a second premise of the JD-R model is that two different underlying psychological processes play a role in the development of job strain and motivation: (1) an *energetic process* of overtaxing and wearing out in which high job demands exhaust the employee's energy backup; (2) a *motivational process* in which lacking resources preclude dealing effectively with high job demands and foster mental withdrawal or disengagement. These hypotheses are conceptually consistent with the JDCS (Karasek, 1979) but the JD-R model does not restrict itself to specific job demands or job resources including potentially all job demands and job

resources. Thus, JD-R model is more flexible and can be tailored to a much wider variety of work settings. Moreover, the JD-R model expands the JD-CS model by emphasizing the unique role of job resources as main predictors of motivation/learning-related outcomes. According to the interaction hypothesis of the JD-CS model, job resources function only as moderators in the relationship between job demands and strain (De Lange et al., 2003), or learning (Taris et al., 2003). The JD-R model goes one step further by suggesting that job demands are the most crucial predictors of job strain, while job resources are the most crucial predictors of work motivation, learning, commitment, and engagement. Consistently, job resources function mainly as moderators in interactions with strain as the dependent variable (here job demands are the main predictors; e.g., Bakker, Demerouti, & Euwema, 2005; Xanthopoulou et al., 2007), and as predictors in interactions with motivation and learning as the dependent variables (here job demands are the moderators; e.g., Bakker et al., 2007). Thus, the JD-R model (Bakker & Demerouti, 2007, 2013; Cotton, Dollard, & De Jonge, 2006) clearly indicates which job characteristics are motivational and which characteristics are health-impairing

Discussion

Job stress is a scientific as well as a social problem (Le Blanc, de Jonge, & Schaufeli, 2008). Over the years, the nature of job demands has shifted from purely physical to mental and emotional demands highlighting that stress is a complex phenomenon resulting from an interaction process between job demands, job resources, and personal characteristics. Given this complexity, many researchers

tried to develop theories, perspectives, and conceptual models that relate job characteristics with employee well-being.

In effect, several theoretical frameworks have been particularly successful in generating and guiding empirical research: the Job Demand-Control-Support Model (Karasek, 1979; Karasek & Theorell, 1990), the Vitamin model (Warr, 1990), and the Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Each model proposed differs in scope and complexity. For instance, the JDCS model and the JD-R model assume linear relationships between job characteristics and indices of employee well-being. However, the most common conceptual criticism is that the JDCS model is too simplistic and fails to capture the complexity of work environments. On the other hand, the JD-R model expands the JDCS model by emphasizing the unique role of job resources as main predictors of motivation/learning-related outcomes. According to the interaction hypothesis of the JDCS model, introducing several different job demands and job resources; moreover, it suggests that job demands are the most crucial predictors of job strain, while job resources are the most crucial predictors of work motivation, learning, commitment, and engagement. The Vitamin Model (VM), instead, challenges this popular belief of linear relationships, stipulating non-linear relationships between job characteristics and mental health outcomes, including employee well-being.

Nevertheless there is still a gap between theoretical knowledge and practical implications.

CHAPTER 2

The Job-related affective well-being scale: The Italian version of Warr's 12-item scale.

Abstract

The affective well-being is considered to be an important part of human experience (Muchinsky, 2000); it was defined as a subjective estimation of whether a person is feeling well or unwell (Warr, 1987). The model of affective well-being was first adopted in the work context by Peter Warr (1987, 1990) and it was measured by a scale developed on the basis of this model. The main aims of this study were first to translate the Warr's 12-item scale into Italian and to adapt it to Italian culture, and second to test the theoretically-based structure of the Italian version of the scale. The sample was composed of 900 workers of service sector and collected through self-report questionnaire. With the objective of validating the factorial structure of the scale, several models were tested using confirmatory factor analysis. The results supported a four-factor structure: anxiety, comfort, depression and enthusiasm, as well as a five-factor structure including the same four factors plus a second-order factor called global affective well-being. The second-best model was the correlated two-factor model in which the positive and negative items loaded on their own factors. Results are encouraging for the possibility of using the Warr's 12-item scale as a quick and adequate scale to measure job-related affective well-being of Italian workers.

Keywords:

Confirmatory factor analysis; job-related affective well-being; Warr's scale; work-related stress.

Abstract

Il benessere affettivo può essere considerato un aspetto importante dell'esperienza umana (Muchinsky, 2000). Esso è stato definito come la percezione soggettiva dei propri stati emotivi; in altre parole la percezione di come una persona si sente in un determinato momento (Warr, 1987). Il modello del benessere affettivo fu adottato per la prima volta nel contesto lavorativo da Peter Warr (1987, 1990) ed è stato misurato attraverso una scala sviluppata sulla base di tale modello. I principali obiettivi di questo studio sono stati quelli di tradurre e adattare al contesto italiano la scala a 12 item sviluppata da Warr (1990) e di testarne la struttura fattoriale e le proprietà psicometriche. I partecipanti allo studio sono stati 900 lavoratori del settore dei servizi che hanno completato il questionario self-report. Al fine di analizzare la struttura fattoriale della scala, diversi modelli sono stati testati attraverso l'analisi fattoriale confermativa. I risultati hanno supportato una struttura della scala a quattro fattori: ansia, comfort, depressione ed entusiasmo, così come una struttura a cinque fattori comprendente gli stessi quattro fattori precedenti più un fattore di secondo ordine, definito benessere affettivo generale. Inoltre, il secondo miglior modello è stato quello a due fattori correlati, nel quale gli stati affettivi positivi e gli stati affettivi negativi saturano ciascuno sul proprio fattore. I risultati del presente studio sono incoraggianti rispetto alla possibilità di utilizzare la scala di Warr come uno strumento rapido e adeguato a misurare il benessere affettivo dei lavoratori italiani.

Parole chiave:

Analisi fattoriale confermativa; benessere affettivo; scala di Warr; stress lavoro-correlato.

Psychologists agree with the statement that the feeling of pleasure and displeasure is a fundamental dimension of conscious experience, often described as affective well-being. In the last few years, well-being became a central topic also in the organizational research; in fact, a broad literature on well-being and health exists, studying them by different points of view. In particular, the positive psychology movement (Seligman & Csikszentmihalyi, 2000) has focused the interest in the measurement of employees' holistic well-being, increasing attention to the role of the affect as indicator of strain and well-being at work. Therefore, several empirical studies have shown that affective well-being is the most central aspect in occupational well-being (e.g., Balducci, Schaufeli, & Fraccaroli, 2011; Brief & Weiss, 2002; Daniels, Brough, Guppy, Peters-Bean, & Weatherstone, 1997; Van Horn, Taris, Schaufeli, & Schreurs, 2004; Weiss & Cropanzano, 1996).

Affect can be defined as consciously accessible feelings, including different moods and emotions (Fredrickson, 2001). Warr (1987; 1990a) developed a model of affective well-being at work that was based on the experience of a variety of specific emotional states. In particular, *affective well-being* reflects the frequent experience of positive affects and infrequent experience of negative affects (Diener & Larsen, 1993) and it can be considered as a subjective estimation of whether a person is feeling well or unwell (Warr, 1987).

Following similar frameworks offered by Russell (1980), Watson and Tellegen (1985), and Burke, Brief, George, Roberson and Webster (1989), Warr hypothesized a multi-dimensional model of well-being represented by two orthogonal dimensions (pleasure and arousal) but measured by three dimensions: pleasure, anxiety–contentment, and depression–enthusiasm. Principal types of affect

may be located anywhere along those axes. In particular, the two poles of the first dimension (i.e., pleasure) reflect overall negative or positive experiences (from feeling bad to feeling good) without reference to a persons' degree of psychological arousal. The second dimension (i.e., anxiety-comfort) runs diagonally and reflects feelings of anxiety (combining low pleasure with high mental arousal) and feelings of comfort (combining low arousal and high pleasure). Also the third dimension (i.e., depression-enthusiasm) runs diagonally and reflects feelings of depression and sadness (combining low pleasure and low arousal) and feelings of enthusiasm (combining high pleasure and high arousal). The arousal dimension on its own is not considered to reflect well-being, and its poles are therefore left unlabelled (Warr, 2007). Thus, pleasure represents the most important dimension rather than arousal dimension; in fact model's graphic representation is elliptical (Makikangas, Feldt, & Kinnunen, 2007). Note that although the dimension of pleasure and arousal can be treated as orthogonal to each other, the three axes of well-being are expected to be intercorrelated.

During the years, in occupational settings the axes proposed above were measured through several self-report scales. For instance, the first axis has mostly been operationalized through measures of job satisfaction, but measures of job attachment and organizational commitment have been used as well (Warr, 1987; 2007). The second axis is usually evaluated through measures of job-related anxiety, job-related tension, and job-related strain. Finally, the third axis is assessed by such measures as occupational burnout, job-related depression, job boredom, and fatigue (Cox and Mackay, 1985; Maslach, Schaufeli, & Leiter, 2001).

Warr (1990b, 1996) has developed measurement scales of all aspects of mental health, including job-related affective well-being. In particular, the author developed a 12-item scale to measure the axes of anxiety-comfort and depression-enthusiasm (Warr, 1990a). The axis of pleasure was measured through the existing measures of job satisfaction and was not, therefore, included in the scale. Specifically, the job-related affective well-being scale is composed by 12 items, six positive affect and six negative affect, to measure both job-related and context-free well-being (Warr, 1990a). In the job-related version, the respondent is asked to evaluate how frequently his/her job has caused him/her to feel certain feelings during the past 2 weeks.

Some researchers have tried to identify the adjectives that best measure every proposed dimension and to validate the bidimensionality and bipolarity of the scale (Daniels, Brough, Guppy, Peters-Bean, & Weatherstone, 1997; Daniels & Guppy, 1994; Sevastos, Smith, & Cordery, 1992; Warr, 1990a). Studies of the factor structure of job-related affective well-being scale have mainly utilized principal component analysis. Although most of these studies confirmed the bidimensionality and bipolarity of these two scales (Daniels & Guppy, 1994; Sevastos et al., 1992), there have been some problems in identifying the adjectives that best measure each dimension. For instance, in a cross-sectional study among 299 Spanish employees, a two-factor solution (consist of the two correlated dimensions of anxiety-comfort and depression-enthusiasm) was found, but the items of “contented” and “cheerful” were found to have high cross-loadings on both factors (Cifre & Salanova, 2002). A reason of these results could be the difficulty in the cultural adaptation of the items in non-English languages.

Moreover, in accord with Watson and Tellegen (1985) other studies proposed a modified version of the two factors structure including both positive and negative affects respectively (e.g., Warr & Parker, 2010).

On the other hand, few studies have studied the structure of job-related affective well-being by means of Confirmatory Factor Analysis (CFA), which is considered the best way to examine the dimensionality of the predefined structure of a scale. For instance, Daniels and colleagues (1997) supported the three-factor structure of the scale, that is positive affect (enthusiastic and optimistic), negative affect (tense, worried and uneasy, calm, relaxed), and pleasant-unpleasantness (contented, cheerful, depressed, gloomy, miserable). However, this structure was not unambiguous because of some double loadings.

Furthermore, in a recent 3-year follow-up study among 615 Finnish managers, Mäkikangas and colleagues (2007) tested five alternative factor analytical models of job related-affective well-being on the basis of the literature in order to verify the theoretically-based structure of the scale. In particular, the authors hypothesized that the end-points of the two axes are not totally opposite, but each endpoint of the axes represents a separate construct although these may correlate with the other three constructs (Warr, 1990a). The results confirmed that the scale contains four inter-related factors of job-related anxiety, comfort, depression, and enthusiasm.

The same results were found by Gonçalves and Neves (2011) that support a factor structure composed of four factors. Moreover, these authors proposed a five factors structure containing the four first-order factors hypothesized plus a general second-order factor: the hypothesis tested was that the four first-order factors are

different dimensions of the same latent factor, i.e., the global affective well-being at work. The results highlighted that this solution shows acceptable adjustment values. Finally, several empirical studies computed a global score of affective well-being (e.g., van Horn et al., 2004).

A recent examination of the literature has indicated that no study has used the Warr's 12-item scale in the Italian context. In addition, few measurement tools are available; two of the most important measures of this attribute are the Positive Affect and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988; Italian version Terracciano, McCrae, & Costa, 2003) and the Job-Related Affective Well-Being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). These scales are similar but Warr's scale shows some advantages. First, it is a context-specific measure that addresses the feelings experienced at work, and not general feelings, and therefore should be a better predictor of work-related outcomes than free-context measures; second, it is based on a circumplex model of affect it offers a multidimensional conceptualization of job-related affective well-being; third, it covers scores of each axis; and fourth is a short and usefull scale to measure job-related affective well-being. On the contrary, PANAS were developed to assess context-free emotions and it does not obtain scores in every axis (e.g., low activation on depression/comfort axis; Gonçalves & Neves, 2011), while JAWS coverages of a wide range of affective responses but it is longer and more difficult to administer.

Aims of the study

Starting from the literature, the main aim of the study was (a) to translate the Warr's 12-item scale into Italian and to adapt it to Italian culture; (b) to investigate

the structure of Warr's (1990a) 12-item scale and its reliability for application among Italian workers. In detail, according to previous studies (Mäkikangas, Feldt, & Kinnunen, 2007), the scale is assumed to contain four inter-related aspects of affective well-being: anxiety, comfort, depression, and enthusiasm.

Method

Participants

Starting from an initial dataset consisting of 1,000 participants at the study, only 900 Italian workers (487 men and 413 women) in services sector were selected for this report (see more detail in data analysis section). In particular, a wide variety of industries were represented including: waste disposal (30.1%), telecommunication (9.4%), education (9.7%), retail sales (40.8%), and security sector (10%). Regarding the job positions, they were included 450 (50%) employees, 270 (30%) manual laborers, 120 (13.3%) professional consultants, and 60 (6.7%) general managers. Their range age was 18-65 ($M = 41.37$; $SD = 8.63$). Almost 32% (288/900) of employees had primary education or lower secondary education, 44.9% (404/900) higher secondary education, and 23.1% (208/900) had a university degree or equivalent. Most of the respondents (716/900; 79.6%) held a permanent job, while 12.6% (114/900) held a temporary job, and about 7.8% (70/900) had another type of contract. Approximately 45% (410/900) of participants had been working for their organization between 1 and 7 years, 32% (285/900) from 8 to 14 years, and 23% (205/900) over 14 years. Forty-six percent of the respondents (417/900) had a daytime contract, while 54% (483/900) worked in shifts.

Measures

Job-related affective well-being was assessed with 12 items based on Warr's (1990a) scale that investigate the frequency of experience of positive and negative affective states associated with an individual's work across the previous few weeks. In particular, respondents were asked "Thinking of the past few weeks, how much of the time has your job made you feel each of the following": (1) tense (teso); (2) optimistic (ottimista); (3) gloomy (malinconico); (4) contented (soddisfatto); (5) depressed (depresso); (6) calm (calmo); (7) worried (preoccupato); (8) miserable (avvilto); (9) relaxed (rilassato); (10) uneasy (ansioso); (11) cheerful (allegro); and (12) enthusiastic (entusiasta). Scores ranged from never (1) to always (4).

Items from the original scale were translated into Italian and adapted for Italian culture, following the guide for cross-cultural adaptation of self-report measures (Beaton, Bombardier, Guillemin, & Bosi Ferraz, 2000; Guillemin, 1995): translation, synthesis, back-translation, expert committee review, and pre-testing. In particular, pre-testing was performed in order to verify whether this version was equivalent to the original scale and if the target group would be able understand it properly. As recommended by Beaton et al. (2000), a sample of 40 workers with different levels of education (20 men and 20 women; mean age = 42.8; $SD = 5.4$) was asked to read the scale aloud, fully explain their answers, and report any difficulty identified. According to Ciconelli, Ferraz, Santos, Meinão and Quaresma (1999), if 15% of the workers encounter difficulty understanding the questions or if the interpretations of the questions do not have a meaning equivalent to the original scale, the questions would have to be reformulated. In general, all steps of cross-

cultural adaptation went easily. Thus, a final Italian version of the Warr's 12-item scale was reached.

Procedure

The survey study was conducted in Italy during 2011-2012. The study process can be divided into several steps. Prior to data collection, companies were invited by the researchers to participate in the study on basis of company size and sector. The questionnaires were administered to small groups of employees during training courses in the companies. After a brief explanation about the purpose of the research, employees were motivated to complete the questionnaire. At the end of the data collection process, questionnaires were placed in envelopes and sealed. The top manager of each company received a report following data collection detailing the prevalence of positive and negative affect during the job in the workers. Research procedures described in this paper were performed in compliance with the American Psychological Association, the Italian Psychological Association ethical guidelines for research and the University's Internal Review Board guidelines.

Data analysis

Before conducting confirmatory factor analysis, we screened our dataset in order to identify outliers and missing data. Regarding the outliers, as recommended by Tabachnick and Fidell (2007), we identified univariate outliers using absolute z-scores greater than 3.29, while we identified multivariate outliers by means of the Mahalanobis distance method ($p < .001$). Then, we removed them ($N = 50$) from the database. Regarding missing data, in the present study 95% (900/950) of participants

had no missing items and the remaining 5% (50/950) had more than four missing items; thus, we decided to removed them from the database.

We conducted CFAs to test the factor structure of the Italian version of the Warr's 12-item scale. Analyses were conducted on the variance–covariance matrix using AMOS 18 with maximum likelihood estimation. In particular, six alternative factor analytical models of job related-affective well-being were tested on the basis of the previous studies. The first model consist of four-factor model (M1; Mäkikangas et al., 2007) containing the latent factors of anxiety (items 2, 8, and 12), comfort (items 1, 4, and 5), depression (items 3, 6, and 11), and enthusiasm (items 7, 9, and 10). These factors were allowed to correlate. The second model (M3; Gonçalves & Neves, 2011) consists of five-factor model containing the four first-order factors hypothesized in Model 1 plus a general second-order factor. The third model (M3; Cifre & Salanova, 2002; Daniels & Guppy, 1994; Sevastos et al., 1992; Warr, 1990a) consisted of the latent factors of anxiety-comfort items (1, 2, 4, 5, 8, and 12) and depression-enthusiasm (items 3, 6, 7, 9, 10, and 11). The fourth model (M4; Watson & Tellegen, 1985) included the correlated factors of positive affective well-being (items 1, 4, 5, 7, 9, and 10) and negative affective well-being (items 2, 3, 6, 8, 11, and 12). The fifth model (M5; Daniels et al., 1997) included the correlated latent factors of positive affect (items 7 and 9), negative affect (items 1, 2, 4, 8, and 12), and pleasantness-unpleasantness (items 3, 5, 6, 10, and 11). The last model (M6; van Horn, Taris, Schaufeli, & Schreurs, 2004) included all 12 items of job-related affective well-being scale.

We evaluated the fit of the model using the following fit indices: Chi square goodness-of-fit to degrees of freedom ratio (χ^2/df), goodness-of fit index (GFI), the

adjusted GFI (AGFI), the comparative fit index (CFI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). These indices are regarded as indicative of a good fit when Chi square goodness-of-fit to degrees of freedom ratio is smaller than 3, GFI is .90, AGFI .80, CFI .95, and SRMR and RMSEA values are smaller than .08 and .06 respectively (Hu & Bentler, 1999). Moreover, the goodness-of-fit of the basic and alternative models was evaluated by the chi-square difference test and Akaike's information criterion (AIC; Akaike, 1974). In order to ascertain these significant differences, χ^2 had to be significant at $p < .05$ (Byrne, 2001) and the models that generate the lowest AIC values are optimal (Burnham & Anderson, 1998).

Furthermore, on the basis of the CFA results, we computed Cronbach's α coefficients (Cronbach, 1951) in order to assess the internal consistency of the scale.

Results

Table 2.1 shows the means, standard deviations, skewness and kurtosis for the total score and each items of scale. In order to identify a normal distribution, we have considered skewness and kurtosis indices of zero although a range of ± 1 is considered an acceptable span (Marcoulides & Hershberger, 1997; Muthén & Kaplan, 1985). The data showed that the frequency distribution of the items had no values of skewness and kurtosis greater than 1, with the exception of the item "depressed" that presented positive values of skewness and kurtosis just out of range, indicating data are skewed slightly right and a peaked distribution.

Table 2.1. Descriptive statistics of the variables

	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>SE</i>	<i>Kurtosis</i>	<i>SE</i>
Tense	2.90	0.92	-0.38	0.09	-0.79	0.15
Optimistic	2.09	0.80	0.56	0.08	0.09	0.16
Gloomy	1.66	0.75	1.00	0.07	0.66	0.15
Contented	2.74	0.83	-0.16	0.08	-0.55	0.17
Depressed	1.47	0.76	1.07	0.10	1.25	0.16
Calm	2.94	0.89	-0.50	0.07	-0.52	0.18
Worried	2.09	0.83	0.62	0.08	0.03	0.16
Miserable	1.75	0.90	1.00	0.08	0.27	0.15
Relaxed	2.40	0.93	0.15	0.09	-0.84	0.16
Uneasy	1.89	0.89	0.81	0.08	-0.04	0.17
Cheerful	3.09	0.84	-0.56	0.07	-0.42	0.16
Enthusiastic	2.70	1.00	-0.18	0.08	-1.00	0.18

N = 900.

The structure of the hypothesized correlated four-factor model (M1) and its comparison models (M2, M3, M4, M5, M6) were tested. The goodness-of-fit statistics of the tested models are summarized in Table 2.2. As can be seen, the hypothesized correlated four-factor model (M1) was the only model which showed an acceptable fit with the data according to all the goodness-of-fit indexes. Further, the χ^2 -difference tests and AIC values supported the correlated four-factor model.

Table 2.2. Goodness-of-fit statistics for the six confirmatory factor analytic model of job-related affective well-being.

	χ^2	<i>df</i>	GFI	AGFI	CFI	SRMR	RMSEA	AIC	$\Delta\chi^2$
M1	195.18	48	.96	.94	.96	.04	.05	257.18	
M2	431.25	50	.93	.88	.90	.06	.08	413.91	236.07**
M3	654.16	53	.86	.79	.82	.07	.11	706.16	458.98**
M4	256.04	53	.95	.93	.94	.05	.07	308.04	60.86**
M5	563.59	51	.88	.82	.85	.07	.11	619.59	368.41**
M6	636.26	54	.88	.81	.82	0.07	.11	688.26	441.08**

Note. M1 = four factors: anxiety, comfort, depression, enthusiasm; M2 = five factors: a general second-order factor based on M1; M3 = two factors: anxiety-comfort and depression-enthusiasm; M4 = two factors: positive and negative affect; M5 = three factors: positive affect, negative affect, pleasantness-unpleasantness; M6 = one factor: global affective well-being. χ^2 = chi square goodness-of-fit; *df* = degrees of freedom ratio; GFI = goodness-of fit index; AGFI = the adjusted GFI; CFI = the comparative fit index; SRMR = the standardized root mean square residual; RMSEA = the root mean square error of approximation; AIC = Akaike's information criterion; $\Delta\chi^2$ = chi-square difference test. * $p < .01$.

The Figure 2.1 showed the standardized regression coefficients of the model. Thus, Warr's (1990a) 12-item job-related affective well-being scale consisted of four inter-related dimensions of anxiety, comfort, depression, and enthusiasm.

However, the second-best model was the correlated two-factor model (M4) in which the positive and negative items loaded on their own factors. This model showed a clearly poorer fit with the data than the correlated four-factor model, but it showed an acceptable fit with the data according to all the goodness-of-fit indexes. In addition, the solution of a general second-order factor (M2) also showed acceptable fit indices suggesting that above four factors are different dimensions of the same latent factor, i.e., general work-related affective well-being.

On the basis of CFA results, we also computed the Cronbach's alphas coefficients to test for the reliabilities of the obtained factors. Our results indicated that the scales proved to have good internal consistency indices. In particular, the alphas for anxiety were .70; for comfort .71; for depression .72; and for enthusiasm .77. Furthermore, the alphas for positive and negative affect were .81 and .80 respectively.

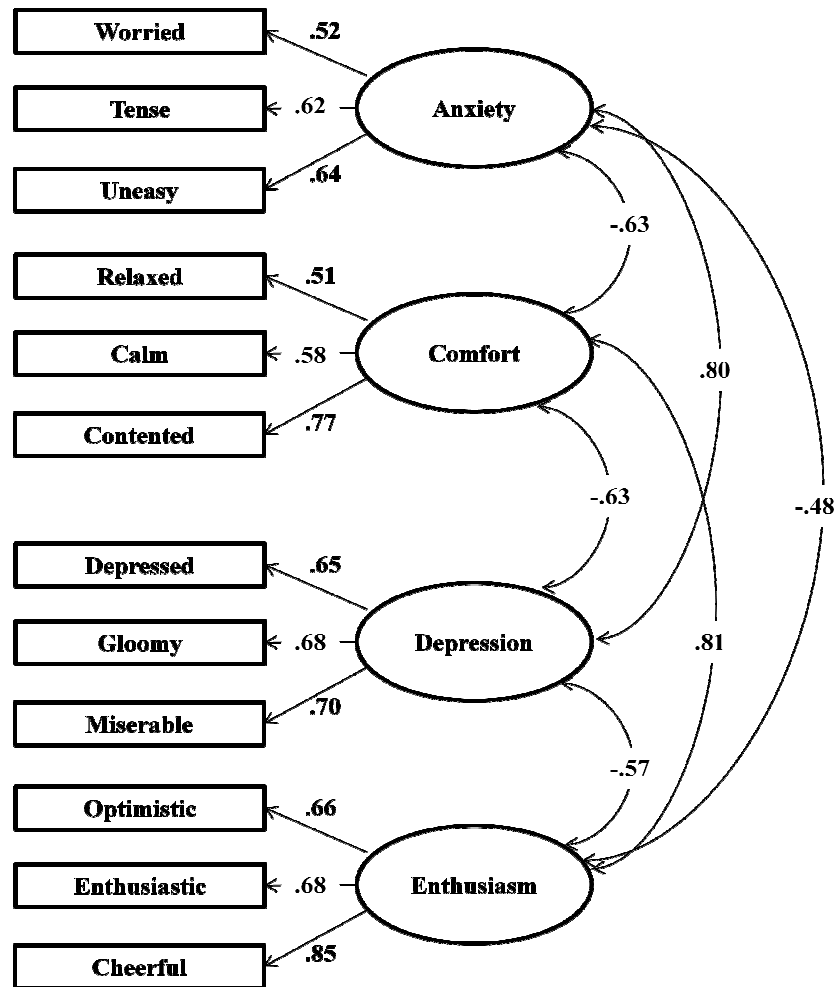


Figure 2.1. Structural equation model of the job-related affective well-being. Standardized estimates are reported. All structural coefficients are statistically significant at $p < .001$.

Discussion and Conclusions

The main aim of this study was to validate the Italian version of the Warr's 12-item scale (Warr, 1990a) in a sample of Italian workers. Globally, our results showed that the Italian translation of the scale is a valid and reliable instrument for the evaluation of job-related affective well-being.

The confirmatory factor analyses on the Italian form indicate that Warr's scale of job-related affective well-being consisted of four inter-related factors: anxiety, comfort, depression, and enthusiasm; this four-factor structure showed a better approximation with the data than the alternative models. Thus, anxiety and comfort, and depression and enthusiasm, did not represent the endpoints of the same constructs according to Warr's (1987) views. On the contrary, the present study separates the aspects and degree of pleasantness and arousal in the job-related affective well-being scale, showing that the four dimensions of well-being were separate, although correlated, constructs. Indeed, it has to be noted that the dimensions of well-being correlated strongly with each other: consequently, employees high on comfort and enthusiasm are usually low on depression and anxiety. In general, in line with the literature the results supported our hypothesis (Gonçalves & Neves, 2011; Mäkikangas et al., 2007) and were also in accord with previous study about the structure of the job-specific affective well-being scale (JAWS; van Katwyk et al., 2000).

However, the solution of a general second-order factor also showed acceptable adjustment values. Thus, according to previous studies (Warr, 1990a; Warr & Parker, 2010; Gonçalves & Neves, 2011), these results indicate that all dimensions of Warr's scale could be include in the same latent factor of general work-related affective well-being. Moreover, they reinforce the multi-dimensionality of work-related affective well-being, as already suggested by several authors (e.g., Daniels et al., 1997; Warr, 2002; Van Horn et al., 2004).

The second-best model was the correlated two-factor model in which the positive and negative items loaded on their own factors. This structure is consistent

with the theoretical model developed by Watson and Tellegen (1985). However, this model showed a clearly poorer fit with the data than the correlated four-factor model leaving room for the more multidimensional structure of affective well-being, which was found in the present study. In addition, the one- and two-factor solutions, which included the factors of anxiety-comfort and depression-enthusiasm, represented poorly the structure of the scale. Of these factor models, the latter has been the most applied (e.g., Jeurissen & Nyklicek, 2001; Warr, 1990a, b).

Internal consistency indices of the factors were good but lower than those found in other studies (Gonçalves & Neves, 2011; Mäkikangas et al., 2007).

Strength and Limitations

The present study has some limitations, all of which suggesting rewarding avenues for further research. The first limitation is its lack of generalizability to the entire working population because it was used a non-probability sampling methods (i.e., availability sampling). Despite this method reduces the external validity of the study, non-probability sampling methods are often used in qualitative research or in quantitative studies when researchers are unable to use probability selection methods. Nevertheless, for future research it is better to define the population first, and then obtain a random sample.

The second limitation is the cross-sectional nature of the data: further research could highlight the stability of results through the test–retest procedure. A longitudinal multi-informants approach could allow us to understand whether the trends, even the statistically less significant, remain. Despite, the results of the

present study provide particular support for the reliability and validity of the Warr's 12-item scale when used with Italian workers.

Practical implications

The findings of the present study are in line with the previous literature and they are encouraging with respect to the possibility of using the Warr's 12-item scale as a short, simple, but adequate measure for investigating the job-related affective well-being of Italian workers'. Moreover, this study has revealed that work-related affective well-being may be understood as a multi-dimensional phenomenon. It also carries implications for practitioners in occupational health care: in effect, the present conceptualizations of affective well-being may help occupational health professionals to develop a correspondingly extensive repertoire of intervention strategies. For instance, the Warr's scale may be used in workplace health surveillance, especially in the context of the European Framework Agreement on Work-related Stress (2004), which encourages implementing various measures that promote the well-being in the workplace.

SECOND PART

*"Enthusiastic employees excel in their work because they maintain the balance
between the energy they give and the energy they receive."*

— Prof. Dr. Arnold B. Bakker

CHAPTER 3

The key role of positive and negative affect in stress process: A structural equation model.

Abstract

This study explores the importance of the affective experiences at work of employees in service sector by addressing the research question: How can affective experiences at work help to explain the individual outcomes of stress process? Affective Events Theory (AET) forms the theoretical foundation of this study. In particular, the aim of the present study was to investigate the role that negative and positive job-related affect play as mediators of the relation between job characteristics and outcomes of work-related stress. Starting from JD-R model, it was tested a model in which the motivational process was operationalized in terms of the effect of job resources on organizational commitment, whereas the health impairment process was operationalized in terms of the effect of job demands on turnover intentions. Nine-hundred employees of service sector from 18 to 65 years of age completed self-report measures on job demands, job resources, and outcomes of the stress process. The findings of this study showed that job demands were associated with turnover intention, whereas job resources were associated with organizational commitment. Furthermore, job-related negative affect partially mediated the relationship between job demands and turnover intentions, whereas job-related positive affect partially mediated the relationship between job resources and organizational commitment. Despite some limitations, these results have important implications for practice because they improve the understanding of the role of the affect at work.

Keywords:

JD-R model; job-related affect; turnover intention and organizational commitment.

Abstract

Questo studio esplora l'importanza delle esperienze affettive dei lavoratori nel settore dei servizi, partendo dall'ipotesi di ricerca: Come le esperienze affettive sul luogo di lavoro possono contribuire a spiegare gli esiti dello stress lavorativo? L'Affective Events Theory (AET) costituisce il fondamento teorico di partenza. In particolare, l'obiettivo principale del presente studio è stato quello di indagare il ruolo che gli stati affetti positivi e negativi sperimentati sul luogo di lavoro giocano come mediatori della relazione tra le caratteristiche del lavoro e gli esiti del processo dello stress lavorativo. A partire dal modello JD-R, è stato testato un modello nel quale il processo motivazionale è stato definito come l'effetto delle risorse lavorative sull'impegno verso la propria organizzazione, mentre il processo di impoverimento della salute è stato definito come l'effetto delle domande lavorative sulle intenzioni di turnover. Novecento lavoratori afferenti al settore dei servizi di età compresa tra i 18 e i 65 anni hanno completato un questionario self-report che comprendeva misure sulle domande lavorative, sulle risorse lavorative e sugli esiti dello stress lavorativo. I risultati del presente studio hanno evidenziato che le domande lavorative sono positivamente associate con le intenzioni di turnover, mentre le risorse lavorative sono positivamente associate con l'impegno verso la propria organizzazione. Inoltre, gli affetti negativi mediano parzialmente la relazione che intercorre tra le richieste lavorative e le intenzioni di turnover, mentre gli affetti positivi mediano parzialmente la relazione che intercorre tra le risorse lavorative e l'impegno verso la propria organizzazione. Nonostante alcune limitazioni, le implicazioni pratiche del presente studio sono legate maggiormente alla comprensione del ruolo che hanno gli stati affettivi nella vita lavorativa.

Parole chiave:

Modello JD-R; stati affettivi sul luogo di lavoro; intenzioni di turnover e impegno verso l'organizzazione.

During the last decades of the twentieth century there was a significant shift in the distribution of employment away from agriculture and industry into the service sector (Lewig & Dollard, 2003); thus, this sector is today a major component of modern advanced countries. Its basic characteristic is the production of services instead of end products; moreover, it may involve different sub-sectors, such as the transport, distribution and sale of goods from producer to a consumer, and the provision of a service.

Several studies showed that employees of service sector are at high risk of work-related stress and this is reflected in high levels of negative outcomes for health and well-being. Indeed, as mentioned in previous chapters, stress consequences have a negative impact on the worker (de Lange et al., 2003; Hall, Dollard, Winefield, Dormann, & Bakker, 2013, Ilies et al., 2011; Sonnentag & Frese, 2012; Zohar, Tzischinski, & Epstein, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) physically (e.g., headaches and cardiovascular disease), psychologically (e.g., depression, low self-esteem, and burnout), behaviourally (e.g., alcohol use and smoking), and organizationally (e.g., absenteeism, turnover, and low productivity). Concerning the organizational outcomes of the stress process, turnover intention and organizational commitment are two of the most examined popular subjects in the study of work related attitudes (for review, Mor Barak, Nissly, & Levin, 2001; Meyer & Maltin, 2010).

Turnover intention can be defined as a conscious and deliberate willingness to leave the organization (Tett & Meyer, 1993). In particular, researchers have determined that behavioral intentions are related to turnover. For instance, Griffeth, Hom, and Gaertner (2000) found that the employee's intention to stay or leave the

organization remains one of the best predictors of voluntary turnover. The costs associated with an organization's high voluntary turnover rate are well documented in the literature; thus, identifying predictors of turnover intention can allow the firm to correct the conditions that encourage thoughts of quitting and to manage correctly the firm's voluntary turnover rate. There are three major categories of turnover antecedents emerging from empirical studies of service workers, such as demographic factors, professional perceptions (e.g., job satisfaction), and organizational conditions. Specifically, there is rather consistent evidence from numerous studies that workers experiencing high levels of job stress are more likely to leave their positions (e.g., Cavanaugh, Boswell, Roehling, & Boudreau, 2000). The stress-related characteristics that have been associated with job turnover include role overload, lack of clarity in job descriptions, lacking in colleagues and supervisors support, perceptions of inadequate procedural and distributive justice policies in an organization (Houkes, Janssen, De Jonge, & Nijhuis, 2001; Li & Bagger, 2012).

Organizational commitment can be defined as a psychological state that binds an employee to an organization, thereby reducing the incidence of turnover (Allen & Meyer, 1990), and as a mindset that takes different forms and binds an individual to a course of action that is of relevance to a particular target (Meyer & Herscovitch, 2001). It comprises attitudinal, normative, and continuance aspects (Allen & Meyer, 1990): an employee's commitment reflected a desire, need and obligation to maintain membership in an organization. Employee commitments have been connected to a multitude of organizationally relevant variables: for instance, Meyer and colleagues (2002), analyzing the antecedents, correlates and consequences of organizational

commitment, highlighted that it is positively associated with organizational support and negatively associated with turnover cognitions, role conflict, and role ambiguity. Furthermore, the literature reported significant negative correlations between job stressors and organizational commitment; thus, individuals perceiving a more stressful work situation reported lower organizational commitment (Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002).

In accord with these previous researches, the aim of the present study is to examine the relationship between job characteristics and outcomes of stress process in order to understand which job characteristics predict both turnover intentions and organizational commitment in employees of service sector.

JD-R model

As mentioned in previous chapters, many studies have shown that the work environment can have a major effect on employee work-related stress; for this reason, occupational health psychology is increasingly focused on identifying the relationships between job characteristics and psychological well-being. In recent years, occupational stress and health research has been guided by a new model of work-related stress that has proven to be useful to identify particular job characteristics important for employee well-being, the Job Demands-Resources model (JD-R; Demerouti et al., 2001). It is based on the assumption that whereas every occupation may have its own job characteristics, these factors can be classified in two general categories (i.e., job demands and job resources) able to start both energetic and motivational process. Different combinations (interactions) of specific job demands and specific job resources determine employee well-being (Bakker &

Demerouti, 2007). Specifically, stressors associated with strain and enduring health outcomes in service sector were high workload, high emotional (client) demands, low support, and lack of task clarity.

The JD-R model has been successfully adopted in various occupational settings with different different sets of job demands and job resources. In particular, several cross-sectional and longitudinal studies have reported positive findings showing the robustness of the JD-R model in predicting of work-related stress (Bakker, Demerouti, De Boer & Schaufeli, 2003; Bakker, Demerouti, & Euwema, 2005; Hakanen, Bakker & Schaufeli, 2006; Hakanen, Schaufeli & Ahola, 2008; Hansez & Chmiel, 2010; Hu, Schaufeli & Taris, 2011; Hu & Schaufeli, 2011; Korunka, Kubicek, Schaufeli, & Hoonakker, 2009; Lewig, Xanthopoulou, Baker, Dollard & Metzger, 2007; Llorens, Bakker, Schaufeli, & Salanova, 2006; Schaufeli & Bakker, 2004; Schaufeli , Bakker, & Van Rhenen, 2009). However, the most of studies on the model have taken burnout and work engagement as key variables in the health impairment process and the motivation process, respectively. Thus, only few studies tested the robustness of the JD-R model beyond these two variables. For instance, in a study with 818 employees of a public administration agency, Balducci and colleagues (2011) tested the mediation effect of negative and positive job-related affective experiences in order to improve the understanding of the dual processes assumed by the JD-R model. The results indicated that job-related affective experiences may be integrated into the JD-R model, suggesting that such experiences may play a crucial role in the health impairment and motivational processes.

Therefore, starting from JD-R model, the aim of the present study is to focus on the role of job-related affect in the relation between job demands, job resources, and employees' well-being.

Affective reactions and job stress

Interest in emotions in organizational research has been increasing over the past decade; therefore, a number of recent publications is dedicated to the topic (e.g. Ashkanasy, Hartel, & Zerbe, 2000; Fineman, 2000; Lord, Klimoski, & Kanfer, 2002). In particular, the literature has shown that the stress is associated with affective reactions: in the short term, mood disturbances and negative affective states can occur (Rodell & Judge, 2009); in the long run, depressive symptoms, psychosomatic complaints, and other distress symptoms can do harm to health and well-being of employees (Leitner & Resch, 2005; Parkes, Menham, & Rabenau, 1994). For this reason, affective reactions are thought to represent the principal pathway linking psychological stress to disease and they seem to be related mainly to specific job characteristics, such as high workload, aversive events, and stressful achievement settings.

One prominent framework, the Affective Events Theory (AET) proposed by Weiss and Cropanzano (1996), focuses on the structure, causes, and consequences of affective experiences at work. It argued that actual affective or emotional states are a central factor in explaining the links between work environment, affective traits, and work attitudes and behaviors. More in detail, the authors suggested that organizational events are proximal causes of affective reactions. «Things happen to people in work settings and people often react emotionally to these events. These

affective experiences have direct influences on behaviors and attitudes» (Weiss and Cropanzano, 1996, p. 11). Thus, the characteristics of the work environment predispose the occurrence of certain work events, which lead to specific emotions (affective reactions), which in turn shape work attitudes and behaviors (Weiss & Cropanzano, 1996).

In accord to several researches, affects (defined as consciously accessible feelings including different moods and emotions, Fredrickson, 2001) influence a wide variety of cognitive and behavioral responses (Fiske & Taylor, 1991; Frijda, 1993; George, 1996), including an action readiness, a general readiness to deal with the environment through increased arousal and vigilance. When emotional reactions are aggregated over time, they are proposed to influence the overall feelings one has about the job. Since the affective experiences are responses to work events that employees experience every day of their work lives, this potentially elevates these events on the job as predictors of job outcomes. Summarizing, the affective reactions may have immediate influence on work actions and may influence work attitudes and cognitive-driven behaviors over time (Grandey, Tam, & Brauburger, 2002). In particular, they are considered to have a mediating role between stable features of the work environment and job attitudes and behavior (Fisher & Ashkanasy, 2000).

Previous researches have supported the hypothesized relationship between affective reactions at work and outcomes such as job satisfaction, organizational commitment, and intention to quit. For instance, Fisher (2000) found that positive and negative emotions significantly related to measures of job satisfaction. Moreover, in two studies George (1989) and George & Jones (1996) showed that positive and negative moods predicted turnover intentions. On the contrary, in a

longitudinal study with 129 employees of a division of an electronics firm, Pelled and Xin (1999) highlighted that only negative affect increased absenteeism and turnover. Furthermore, a growing number of researchers believe that affective responses in organizations play an important role in predicting organizational commitment. For instance, in a multilevel study with 230 employees of different Chinese firms, Li and colleagues (2010) found that the overall commitment to an organization is related to certain emotions in an organizational setting. In addition, the results showed that intragroup relationship conflict strengthened the negative association between chaotic emotions and organizational commitment.

Aims of the study

In light of the previous considerations, the aim of the present study was to investigate the role that negative and positive job-related affect play as mediators of the relation between job characteristics and work-related stressor outcomes. Accordingly, the hypotheses of the study were the following (Fig 3.1):

H1: Negative job-related affect mediates the relationship between high job demands and turnover intention (health impairment process);

H2: Positive job-related affect mediates the relationship between job resources and organizational commitment (motivational process);

H3: Various cross-links exist between the key variables of the study:

(a) Job demands and job resources are negatively related;

- (b) Turnover intention and organizational commitment are negatively related;
- (c) Job resources are negatively related to Turnover intention;
- (d) Turnover intention is positively related to negative job-related affect;
- (e) Organizational commitment is positively related to positive job-related affect.

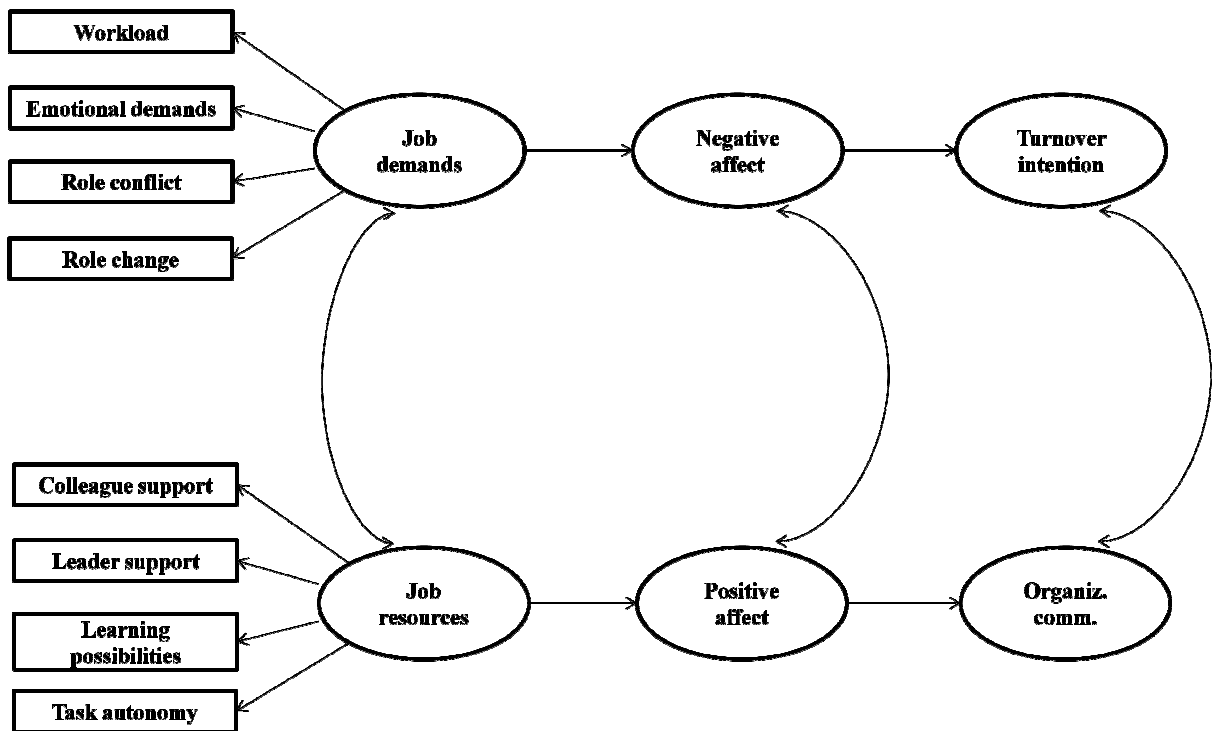


Figure 3.1. The research model.

Method

Participants

Participants in the study were 900 workers (487 men and 413 women; Figure 3.2) in services sector of south Italy. Their range age was 18-65 ($M = 41.37$; $SD = 8.63$). A wide variety of job roles were represented including: 450 (50%) employees,

270 (30%) manual laborers, 120 (13.3%) professional consultants, and 60 (6.7%) general management (Figure 3.3).

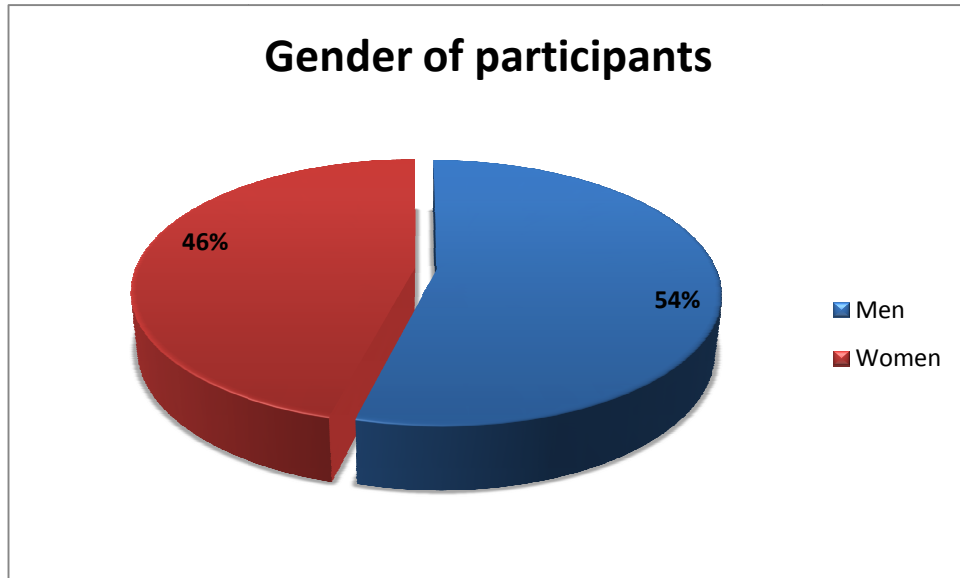


Figure 3.2. Employees' classification on the basis of gender.

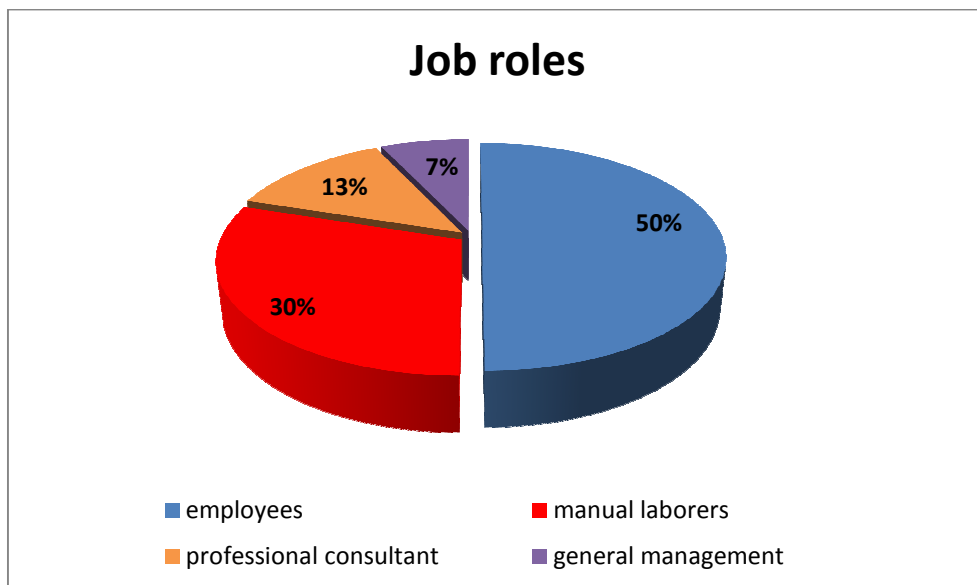


Figure 3.3. Employees' classification on the basis of job roles.

Most of the respondents (716/900; 79.6%) held a permanent job, while 12.6% (114/900) held a temporary job, and about 7.8% (70/900) had another type of contract (Figure 3.4). Approximately 45% (410/900) of participants had been working for their organization between 1 and 7 years, 32% (285/900) from 8 to 14 years, and 23% (205/900) over 14 years (Figure 3.5).

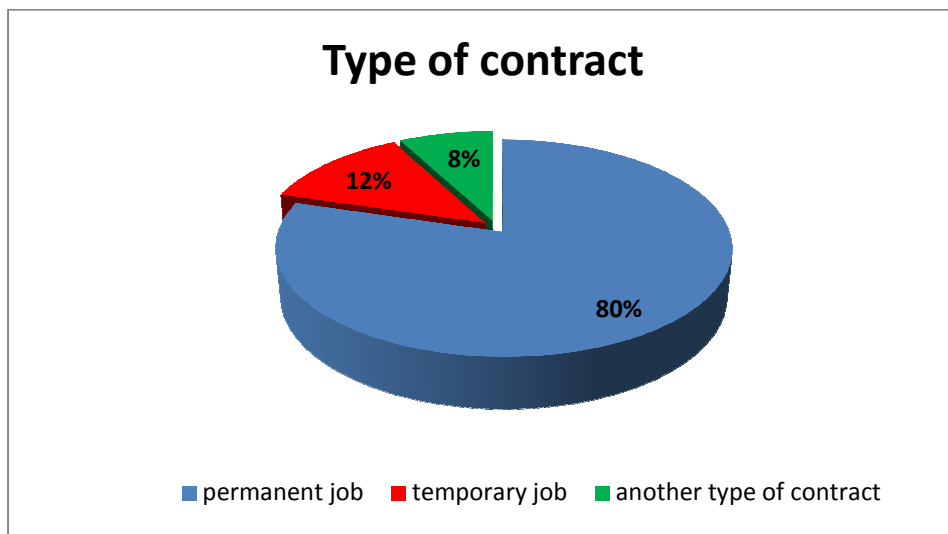


Figure 3.4. Employees' classification on the basis of type of contract.

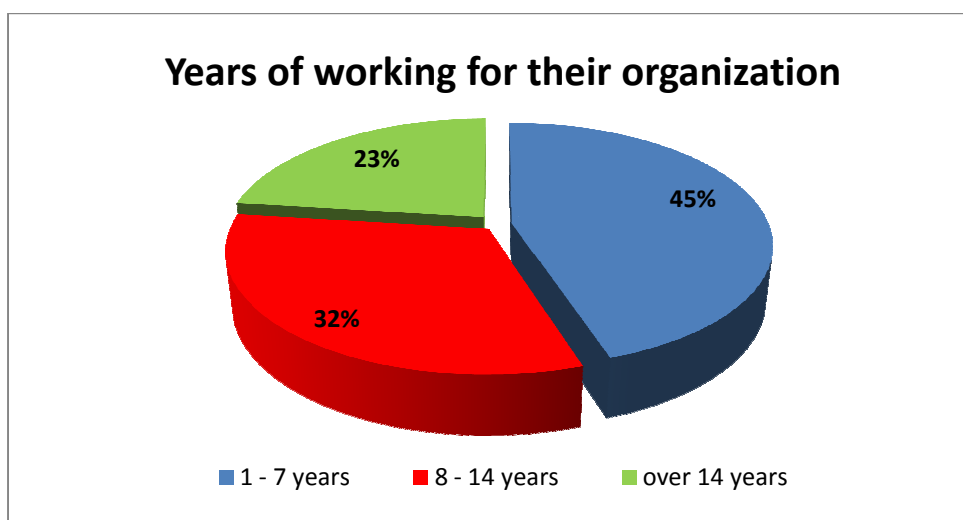


Figure 3.5. Employees' classification on the basis of years of working for their organization.

Forty-six percent of the respondents (417/900) had a daytime contract, while 54% (483/900) worked in shifts (Figure 3.6). Almost 32% (288/900) of employees had primary education or lower secondary education, 44.9% (404/900) higher secondary education, and 23.1% (208/900) had a university degree or equivalent (Figure 3.7).

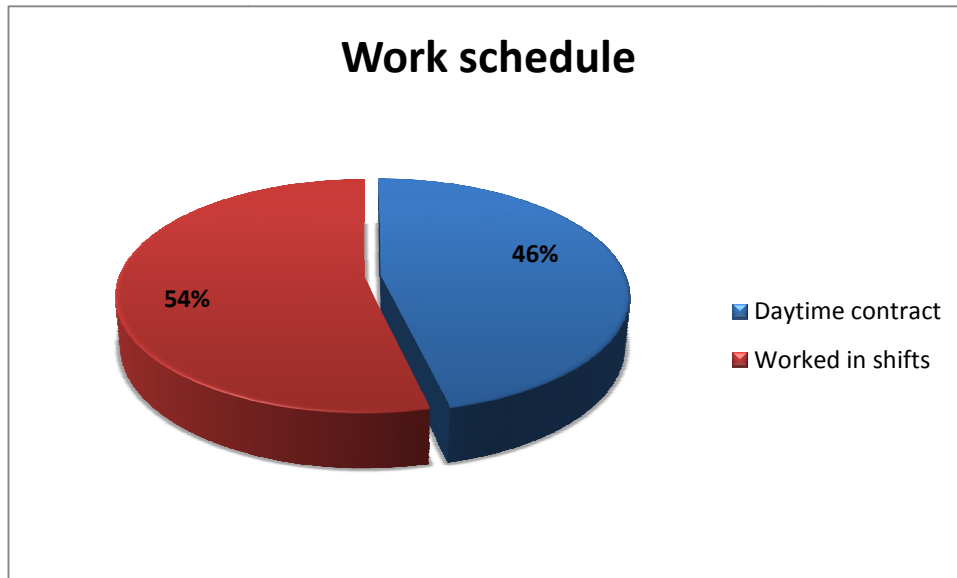


Figure 3.6. Employees' classification on the basis of work schedule.

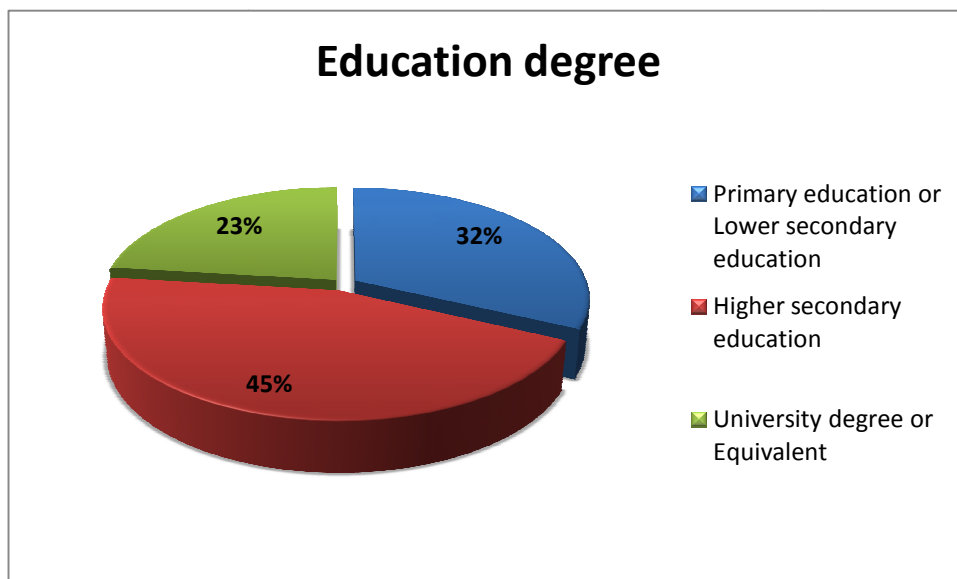


Figure 3.7. Employees' classification on the basis of education degree.

Measures

All measures of the study were based on scales from the short version of the Questionnaire on the Experience and Evaluation of Work (QEEW; Van Veldhoven & Meijman, 1994; Italian version, Pace, Civillieri, Foddai, Lo Cascio, Passalacqua, & Zanca, 2010), a self-reporting questionnaire that has been used in occupational health care services and in applied academic research in the Netherlands, Belgium, and Norway (e.g., Bakker, Van Veldhoven, & Xanthopoulou, 2010; Hauge, Skogstad, & Einarsen, 2010; Notelaers, De Witte, Van Veldhoven, & Vermunt, 2007). Previous research has found evidence for the validity of the QEEW scales (e.g., Bakker et al., 2010; Pace et al., 2011; Van Veldhoven, De Jonge, Broersen, Kompier, & Meijman, 2002; Van Veldhoven, Taris, De Jonge, & Broersen, 2005).

In the QEEW all items on job demands and job resources have a four-point answering scale (1 = never, 2 = sometimes, 3 = often, and 4 = always), consistent with the idea that this provides relevant information – through job incumbents – on the amount of exposure to environmental job characteristics (Dewe, 1991). Outcome measures in the QEEW (e.g., turnover intention and organizational commitment), however, are based on a simple yes/no-response to several statements about the job or the organization. Based on several previous studies (Moriguchi, Alem, Van Veldhoven, & Coury, 2010; Van Veldhoven, 2008; Pace et al., 2013), response categories were modified to a four-point format in the Italian version (1 = never, 2 = sometimes, 3 = often, and 4 = always) in order to improve the discriminatory power of the scale. This change allows respondents to provide a more precise assessment than in the dichotomous, original version. In addition, in order to have a similar score

range for all scales used in this study, we calculated sum scores for each scale, which were then transformed to a range from 0 to 100.

Specifically, in the present study we included the following scales:

Job demands

Pace and Amount of Work has been based on the JCQ (Karasek, 1985) and is assessed with 7 items that refer to quantitative workload: How much work is there to be done in how much time? An item example is: “Do you have to work very fast?”. Cronbach’s alpha was .73 in the present study.

Emotional job demands were assessed by a five-item scale that refers to the qualitative ways in which a job may require effort. In some items emotional workload in general is surveyed. In other items specific types of emotional aspects in the job are surveyed, like difficult patients or customers. An item example is: “Is your work emotionally demanding?”. Cronbach’s alpha was .70 in the present study.

Role conflict is assessed with 4 items that refer to the presence of undesirable tasks. An item example is: “Do you have to do work which you would rather not do?”. Cronbach’s alpha was .71 in the present study.

Role change is assessed with 3 items that refer to the effects that changes in tasks have on employees. An item example is: “Do the changes in your tasks have negative consequences for you?”. Cronbach’s alpha was .72 in the present study.

Job Resources

A wide variety of job resources scales is available in the QEEW relating to job content, social organization, and HR practices.

Colleague support and leader support. Two separate scales are included in the questionnaire, one for colleagues and one for the direct boss/leader. Both are 5-item scales that contain a mix of positive and negative ways to describe the quality of the relationship. Question content ranges from social support to overt aggression, and from items about solidarity in behavior to items about general work atmosphere. The scales take a broad view on the social support dimension (Johnson & Hall, 1988; Karasek & Theorell, 1990). Item example: “Do you get on well with your colleagues/boss?”. In the present study Cronbach’s alpha was .80 and .81 respectively.

Learning possibilities are measured by four items dedicated to the extent the job itself provides opportunities for learning and development. Item content is similar to earlier scales by Karasek (1985) and Hackman and Oldham (1975), for example: “Do you learn new things in your work?”. Cronbach’s alpha was .71 in the present study.

Task autonomy. The items of this scale refer to a range of job control aspects at the task level (in contrast with group or organizational level). The scale contains 5 items about a range of task aspects that can or cannot be controlled by the individual employee. In its item content, this scale resembles the scale of Wall, Jackson, and Mullarkey (1995). Item example: “Can you organize your work yourself?”. Cronbach’s alpha was .78 in the present study.

Mediators

Job-related affective well-being was assessed with 12 items based on Warr’s (1990a) scale that investigate the frequency of experience of positive and negative affective states associated with an individual’s work across the previous few weeks,

with responses given on a 4-point scale ranging from 1 (“Never”) to 4 (“Always”). We derived the following two six-item subscales: *negative job-related affect* (e.g. “Tense”; “Worried”) that refers to the display and treatment of unpleasant emotions; *positive job-related affect* (e.g. “Contented”; “Relaxed”) that refers to the display and treatment of pleasant emotions. The scales were found to be an excellent predictor of work-related stressors and strains (Van Katwyk, et al., 2000). In the present study Cronbach’s alpha was .80 and .81 respectively.

Outcomes

Turnover intention is measured by a 3-item scale that refers to the employee’s personal estimated probability that he or she has a deliberate intent to leaving the organization permanently in near future. Item example: “I sometimes think about changing my job”. Cronbach’s alpha was .72 in the present study.

Organizational commitment. Six items measured affective commitment to the organization, in much the same way as in the affective commitment subscale proposed by Allen and Meyer (1990). Item example: “I feel very at home working for this organisation”. Cronbach’s alpha was .76 in the present study.

Procedure

The survey study was conducted in Italy during 2011-2012. The study process can be divided into several steps. Prior to data collection, companies were invited by the researchers to participate in the study on basis of company size and sector. The questionnaires were administered to small groups of employees during training courses in the companies. After a brief explanation about the purpose of the

research, employees were motivated to complete the questionnaire. At the end of the data collection process, questionnaires were placed in envelopes and sealed. The top manager of each company received a report following data collection detailing the prevalence of work-related fatigue and the quality of recovery in the workers. Research procedures described in this paper were performed in compliance with the American Psychological Association, the Italian Psychological Association ethical guidelines for research and the University's Internal Review Board guidelines.

Data analysis

We conducted preliminary analyses, including descriptive statistics on the independent and dependent variables, and intercorrelations between all the variables.

Moreover, we performed structural equation modeling (SEM) analyses with the AMOS 6.0 software package (Arbuckle, 2005). The main advantages of using SEM instead of hierarchical regression analyses are that (1) it allows assessing and correcting for measurement error and (2) it provides measures of fit of the models under study. Model testing was carried out in all two samples simultaneously by using the so-called multiple-group method. In particular, before testing our hypotheses, two second-order confirmatory factor analysis of job demands and job resources were tested. The one-factor model (M1) assumes one underlying factor (psychosocial risk) that includes all job demands and job resources dimensions, whereas the second model (M2) assumes that job demands (i.e., workload, emotional demands, role conflict, and role change) and job resources (i.e., colleagues and leader support, learning possibilities, and task autonomy) both load on separate yet negatively correlated factors.

In order to test our hypotheses, the research model was fitted to the data. The indicators mentioned above were used to estimate the latent job demands variable and the latent job resources variable; furthermore, latent negative and positive affect, turnover intention, and organizational commitment variables, were postulated that were each measured by a single indicator. For reasons of parsimony, item parceling – using a random procedure - for these endogenous variables was used, computing three parcels for each latent construct in the model. In particular, three structural models with increasing constraints were subsequently fitted to the data: Model 1 (M1), including the direct effect model, with job demands and job resources impacting on turnover intention and organizational commitment respectively; Model 2, including the full mediation model of job-related affect, with negative affect mediating the job demands-turnover intention relationship and positive affect mediating the job resources-organizational commitment relationship; and Model 3, including the partial mediation model of job-related affect, with additional paths running from job demands and job resources to turnover intention and organizational commitment respectively.

We evaluated the fit of the model using the following fit indices: Chi square goodness-of-fit to degrees of freedom ratio (χ^2/df), goodness-of fit index (GFI), the adjusted GFI (AGFI), the comparative fit index (CFI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). These indices are regarded as indicative of a good fit when Chi square goodness-of-fit to degrees of freedom ratio is smaller than 3, GFI is .90, AGFI .80, CFI .95, and SRMR and RMSEA values are smaller than .08 and .06 respectively (Hu & Bentler, 1999). Moreover, the goodness-of-fit of the basic and alternative models was

evaluated by the chi-square difference test and Akaike's information criterion (AIC; Akaike, 1974). In order to ascertain these significant differences, χ^2 had to be significant at $p < .05$ (Byrne, 2001) and the models that generate the lowest AIC values are optimal (Burnham & Anderson, 1998).

Results

Descriptive analyses for all independent and dependent variables are presented in Table 3.1.

Table 3.1. Descriptive statistics for the total sample.

	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>SE</i>	<i>Kurtosis</i>	<i>SE</i>
Workload	46.38	19.47	0.12	.08	-0.43	.16
Emotional demands	45.68	21.95	0.05	.09	-0.47	.17
Role conflict	35.98	21.01	0.41	.08	-0.01	.16
Role change	24.29	21.35	0.71	.08	0.18	.16
Colleague support	74.05	19.78	-0.58	.07	-0.13	.18
Leader support	66.17	22.82	-0.50	.09	-0.17	.16
Learning possibilities	54.68	24.64	-0.20	.07	-0.60	.16
Task autonomy	43.15	22.30	0.08	.08	-0.38	.16
Turnover intention	23.64	23.54	0.90	.09	-0.04	.17
Organizational commitment	59.46	21.33	-0.17	.08	-0.45	.16
Positive affects	14.06	3.13	-0.19	.08	-0.31	.17
Negative affects	10.94	3.44	0.88	.09	0.64	.16

Note. $N = 900$.

Table 3.2 presents the correlation matrix. All measures were significantly correlated in expected direction. Data showed that Turnover intention was positively related to Workload ($r = .18, p < .01$), Emotional demands ($r = .10, p < .01$), Role conflict ($r = .36, p < .01$), Role change ($r = .22, p < .01$), and Negative affects ($r = .29, p < .01$). In addition, it was negatively related to Colleague support ($r = -.27, p < .01$), Leader support ($r = -.25, p < .01$), Learning possibilities ($r = -.22, p < .01$), Task autonomy ($r = -.11, p < .01$), Organizational commitment ($r = -.45, p < .01$), and Positive affect ($r = -.33, p < .01$). In the same way, Negative affect was positively related to Workload ($r = .42, p < .01$), Emotional demands ($r = .24, p < .05$), Role conflict ($r = .40, p < .01$), and Role change ($r = .42, p < .01$). In addition, it was negatively related to Colleague support ($r = -.33, p < .01$), Leader support ($r = -.39, p < .01$), Learning possibilities ($r = -.21, p < .01$), Task autonomy ($r = -.07, p < .05$), Organizational commitment ($r = -.28, p < .01$), and Positive affects ($r = -.52, p < .01$).

In addition, Organizational commitment was negatively related to Workload ($r = -.21, p < .01$), Role conflict ($r = -.46, p < .01$), and Role change ($r = -.24, p < .01$). It was not related to Emotional demands ($r = .06, p > .05$). In addition, it was positively related to Colleague support ($r = .38, p < .01$), Leader support ($r = .53, p < .01$), Learning possibilities ($r = .52, p < .01$), Task autonomy ($r = .31, p < .01$), and Positive affect ($r = .53, p < .01$). In the same way, Positive affects was negatively related to Workload ($r = -.36, p < .01$), Emotional demands ($r = -.11, p < .01$), Role conflict ($r = -.44, p < .01$), and Role change ($r = -.31, p < .01$). In addition, it was positively related to Colleague support ($r = .39, p < .01$), Leader support ($r = .44, p < .01$), Learning possibilities ($r = .35, p < .01$), and Task autonomy ($r = .14, p < .01$).

Table 3.2. Correlations between all variables in the study.

	1	2	3	4	5	6	7	8	9	10	11
1. Workload	--										
2. Emotional demands	.34**	--									
3. Role conflict	.48**	.23**	--								
4. Role change	.41**	.20**	.43**	--							
5. Colleague support	-.29**	-.15**	-.38**	-.28**	--						
6. Leader support	-.28**	-.10**	-.45**	-.32**	.48**	--					
7. Learning possibilities	-.05	.22**	-.28**	-.13**	.25**	.40**	--				
8. Task autonomy	.004	.23**	-.12**	-.04	.02	.20**	.47**	--			
9. Organizational commitment	-.21**	.06	-.46**	-.24**	.38**	.53**	.52**	.31**	--		
10. Turnover intention	.18**	.10**	.36**	.22**	-.27**	-.25**	-.22**	-.11**	-.45**	--	
11. Positive affects	-.36**	-.11**	-.44**	-.31**	.39**	.44**	.35**	.14**	.53**	-.33**	--
12. Negative affects	.42**	.24**	.40**	.42**	-.33**	-.39**	-.21**	-.07*	-.28**	.29**	-.52**

Note. $N = 900$.

** $p < .01$; * $p < .05$.

Before testing our hypotheses, we checked whether the latent factors job demands and job resources could be differentiated empirically. Thus, we conducted confirmatory factor analysis (CFAs), comparing the fit of a two-factor (job demands and job resources) model to the fit of a one-factor (psychosocial risk) model. In the two-factor model workload, emotional demands, role conflict, role change were the observed indicators for job demands, whereas colleague and leader support, learning possibilities, and task autonomy were the observed indicators for job resources. CFA results supported the differentiation between job demands and job resources, since the two-factor model ($\chi^2(243) = 858.34, p < .001$; GFI = .92; AGFI = .90; CFI = .93; SRMR = .06; RMSEA = .04) fitted statistically significantly better than the one-factor model ($\chi^2(244) = 1054.34, p < .001$; GFI = .89; AGFI = .87; CFI = .85; SRMR = .07; RMSEA = .06). In addition, comparison of Model 1 and 2 via a chi-square difference test indicated that there was a significant difference between the fit of the two models, $\Delta\chi^2(1) = 196.00, p < .001$, confirming that Model 2 was significantly better fit to the data than Model 1, with a latent correlation between job demands and job resources in the two factor model of $\phi = -.55$.

Then, the model as displayed in Figure 3.1 was fitted to the data. Table 3.3 displays the results of a series of SEM models by which we tested our hypotheses.

Model 1 (M1) – including the direct effect model, with job demands and job resources impacting on Turnover intention and Organizational commitment respectively - had an acceptable fit to the data. The path from job demands to turnover intention was positive and statistically significant, $\gamma = .55, p < .01$, and so was the path from job resources to organizational commitment, $\gamma = .74, p < .01$.

Table 3.3

The fit of the research model

	χ^2	<i>df</i>	GFI	AGFI	CFI	SRMR	RMSEA	$\Delta\chi^2$	AIC
M1	795.53**	73	.90	.87	.88	.10	.09		1422.34
M2	608.30**	158	.91	.88	.90	.07	.06	187.23**	934.04
M3	452.40**	156	.92	.89	.92	.06	.06	155.90**	812.54

Note. $N = 900$. M1 = predictors on outcomes; M2 = full mediation; M3 = partial mediation. χ^2 = chi square goodness-of-fit; *df* = degrees of freedom ratio; GFI = goodness-of fit index; AGFI = the adjusted GFI; CFI = the comparative fit index; SRMR = the standardized root mean square residual; RMSEA = the root mean square error of approximation; AIC = Akaike's information criterion; $\Delta\chi^2$ = chi-square difference test. ** $p < .01$.

Moreover, to test the mediational hypotheses, Model 2 – including the full mediation model of job-related affect, with negative affect mediating the job demands-turnover intention relationship and positive affect mediating the job resources-organizational commitment relationship – was fitted to the data again. It had a statistically significant better fit than Model 1, $\Delta\chi^2(85) = 187.23, p < .001$.

Finally, Model 3 – including the partial mediation model of job-related affect, with additional paths running from job demands and job resources to turnover intention and organizational commitment respectively - was fitted to the data. It had a statistically significant better fit than Model 2, $\Delta\chi^2(2) = 155.90, p < .001$.

Overall, Model 3, which is graphically represented in Figure 3.8, was the best-fitting model. In addition, the explained variance in negative affect is 30% and

in turnover intention is 18%, while the explained variance in positive affect is 21% and in organizational commitment is 29%.

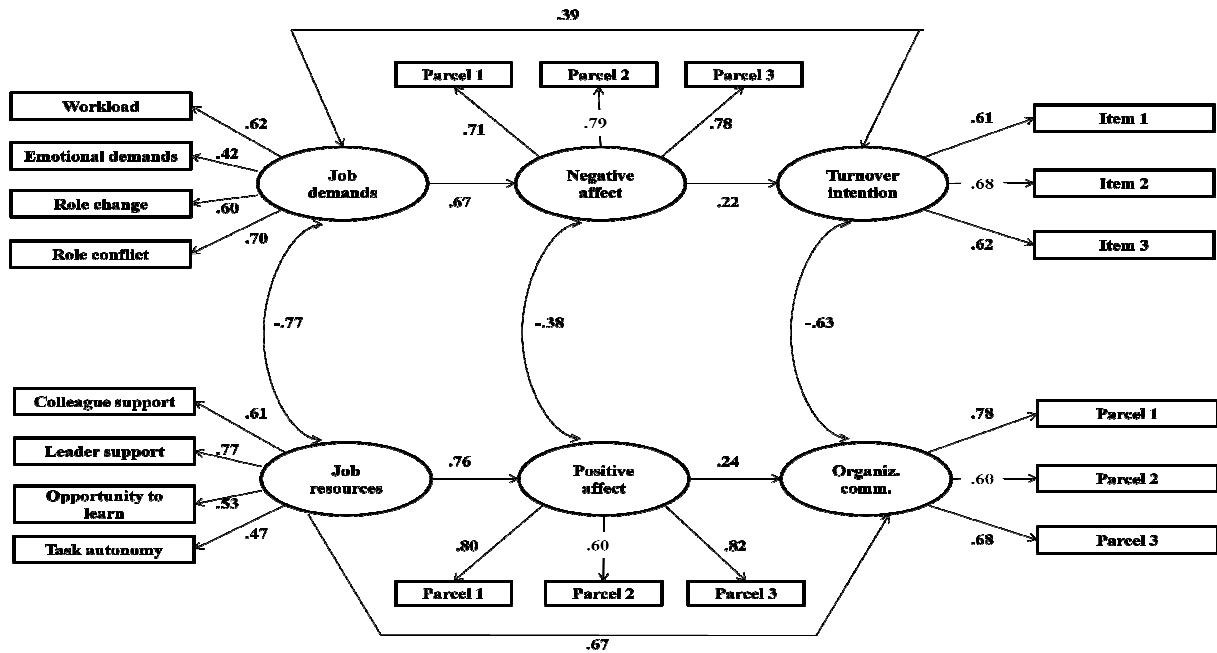


Figure 3.8. The final job demands-resources model with the mediational role of job-related affect. All paths are statistically significant at $p < .01$.

Discussion and Conclusions

The purpose of the present study was to investigate the role that negative and positive job-related affect play in the relation between job characteristics and work-related stressor outcomes. In particular, it wanted to test if specific job characteristics predict both turnover intentions and organizational commitment mediated by negative and positive job-related affect respectively. Starting from JD-R model (Bakker & Demerouti, 2007; Demerouti et al., 2001), it was tested a model in

which the motivational process was operationalized in terms of the effect of job resources on organizational commitment, whereas the health impairment process was operationalized in terms of the effect of job demands on turnover intentions.

The results of SEM analysis supported our hypotheses, indicating that the model fitted the data well, with all the structural relations being in the expected direction. In other words, an overarching job demands factor consisting of workload, emotional demands, role conflict, and role change was related to turnover intentions, while an overarching resources factor consisting of colleagues and leaders support, opportunity to learn, and task autonomy was related organizational commitment. These results are in line with previous studies that have established a link between job characteristics on the hand, and turnover intention and organizational commitment on the other hand (Jawahar & Hemmasi, 2006; Morrow, 2011)

Moreover, we tested for the mediation effect of negative and positive job-related affective experiences to further improve our understanding of the dual processes assumed by the JD-R model. Despite the importance of affect experiences at work is widely explained by literature, however, only little organizational research has addressed the mediational role of affective experiences elicited by working conditions on outcomes of stress process. Our results indicate that job-related affective experiences may play a crucial role in the health impairment and motivational processes theorized by JD-R model. We found evidence for a mediating effect of job-related positive and negative affect in the relationship between job resources-organizational commitment and job demands-turnover intentions respectively, although it were partial rather than full mediations. In line with the Affective Events Theory (AET) proposed by Weiss and Cropanzano (1996),

Schaufeli and van Rhenen (2006) showed that negative emotions are related to health and burnout, while positive emotions are related to the attitude towards the organization. In addition, Van Katwyk and colleagues (2000) found a positive relationship between negative emotions at work and outcomes of the stress process, such as turnover intentions. The present study provided some empirical evidence in line with these previous researches.

In conclusion, the results of the present study allow to improving the understanding of the role of the affect at work. This is important because occupational health research has to date neglected the potential of affective experiences at work as immediate antecedents of individual and organizational outcomes. Given the growing body of evidence (e.g., Pressman & Cohen, 2005; Steptoe, O'Donnell, Marmot, Wardle, 2008) regarding their effect on health and positive individual adaptation, we emphasize that further research should focus on positive as well as negative affective experiences as crucial mediating elements in the job stress and motivational processes. The present results provide also the evidence for the applicability of the JD-R framework outside the area of burnout research, highlighting that the two hypothesized processes (i.e., energetic and motivational process) may reflect substantive psychological processes (Bakker & Demerouti, 2007).

Strength and Limitations

Despite the results of the present study provide to improve the understanding of the role of the affect at work, some limitations of the present research are noteworthy, all of which suggest rewarding avenues for further research. The first

limitation is its lack of generalizability to the entire working population because it was used a non-probability sampling methods (i.e., availability sampling). Despite this method reduces the external validity of the study, non-probability sampling methods are often used in qualitative research or in quantitative studies when researchers are unable to use probability selection methods. Nevertheless, for future research it is better to define the population first, and then obtain a random sample.

The second limitation is the cross-sectional nature of the data, which entails that we cannot draw any conclusions regarding the direction of the causal flow between variables. However, evidence from longitudinal studies in the work stress area (see, e.g., Hakanen et al., 2008; Schaufeli et al., 2009) clearly shows that organizational factors have causal effects on health outcomes; thus, it is possible to be confident about the causal direction of some of the relationships tested. However, longitudinal data are needed for a robust test of the hypothesized mediation.

The third limitation of the present study is that all the data are self-reported, which may imply a bias due to common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Despite we have provided some evidence that common method variance may have not been a critical factor for the current findings, studies with objective reports are needed in this field.

The last limitation of the present study is that it has not considered personal characteristics/resources, although there is evidence for their effect on the outcomes considered in this study (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Practical implications

Our findings suggest that the JD-R framework may be applied for workplace interventions aimed at reducing the likelihood of turnover intention and increasing the likelihood of having an engaged work force. Thus, in terms of primary prevention, turnover intention may be avoided by lowering job demands or by increasing job resources (which would also increase organizational commitment). In addition, secondary prevention should ideally also be in place regarding the job-related negative affect. In particular, organizations should become more sensitive to the emotions of their employees and work to develop self-regulation and emotional coping skills in their employees (Kerr et al., 2006): thus, they could train their managers to identify and deal with the negative affective reactions of their employees and to foster positive affective experiences at work; they could also train employees to manage their affective reactions constructively and effectively (Balducci et al., 2011). The role of emotions in the workplace has long been neglected; on the contrary, the present study suggests that they may be of crucial importance in determining both positive and negative outcomes at work.

CHAPTER 4

Work-related stress in a sample of entrepreneurs: Factors contributing to the businesses success

Abstract

Several studies analyzed the relationship between job stress and job performance but the findings are inconsistent. Moreover, the most of the studies have analyzed this relationship in various professions, but the impact of entrepreneurs stress on the business performance was seldom explored. The main aim of this study was to examine the relationship between specific entrepreneurial job characteristics, personal resources, outcomes of stress process, and businesses performance. Participants in the study were 159 Italian entrepreneurs working in microenterprises in services sector of south Italy and they completed a self-report questionnaire including the key variables of the study. A Multiple Correspondence Analysis (MCA) was performed in order to identify factors that determine an increasing of a business performance. The results indicated that entrepreneurs of businesses with decreased financial turnover showed higher level of negative affect, general dysfunction, need for recovery, and turnover intention than entrepreneurs of businesses with increased financial turnover. Moreover, they showed also lower levels of employees support, positive affect, learning possibilities, occupational self-efficacy, and innovation tendency than entrepreneurs of businesses with increased financial turnover. Therefore, stressful working conditions not only turn up the pressure on entrepreneurs and bring about health concerns, but also affect the businesses performance. Summarizing, the present results suggest that microenterprises can gain more profit if the environment in which they operate is improved and it highlights the importance of understanding the antecedents and

consequences of entrepreneurs' job stress since this phenomenon holds the potential of withdrawal from a new business.

Keywords: Entrepreneurs' job stress; business performance; job characteristics; personal resources.

Abstract

Diversi studi hanno analizzato la relazione tra lo stress lavorativo e le prestazioni lavorative, ma i risultati sono contraddittori. Inoltre, la maggior parte di questi studi hanno analizzato tale relazione in diverse professioni, ma raramente hanno esplorato la relazione che intercorre tra lo stress degli imprenditori e la performance aziendale. L'obiettivo principale dello studio è stato quello di esaminare la relazione che intercorre tra le specifiche caratteristiche del lavoro imprenditoriale, specifiche risorse personali, gli esiti del processo dello stress e la performance aziendale. I partecipanti allo studio sono stati 159 imprenditori che lavorano in micro-imprese nel settore dei servizi nel sud dell'Italia; essi hanno completato un questionario self-report comprendente tutte le variabili dello studio. Al fine di identificare i fattori che sono collegati alla performance aziendale è stata effettuata un'analisi delle corrispondenze multiple (MCA). I risultati hanno indicato che gli imprenditori delle imprese con un volume d'affari diminuito hanno anche mostrato alti livelli di emozioni negative sperimentate sul luogo di lavoro, di ansia e depressione, di necessità di recupero e l'intenzione di abbandonare la propria attività rispetto agli imprenditori di imprese con un cresciuto volume d'affari. Inoltre, essi hanno mostrato livelli più bassi di supporto da parte dei propri dipendenti, di possibilità di apprendimento, di emozioni positive sperimentate sul luogo di lavoro, di autoefficacia percepita e di tendenza all'innovazione rispetto agli imprenditori di imprese con un volume d'affari cresciuto. Pertanto, condizioni di lavoro stressanti non solo provocano nell'imprenditore delle reazioni negative che hanno delle ripercussioni sullo stato di salute, ma anche influenzano le prestazioni dell'impresa. Riassumendo, i risultati del presente studio suggeriscono che le micro-imprese

possono ottenere più profitto se esse migliorano l'ambiente di lavoro nel quale operano. Inoltre, essi evidenziano l'importanza di comprendere gli antecedenti e le conseguenze dello stress lavorativo degli imprenditori poiché tale fenomeno detiene il potenziale del ritiro da un nuovo business.

Parole chiave:

Stress lavorativo degli imprenditori; prestazioni aziendali; caratteristiche del lavoro; risorse personali.

Occupational stress is considered to be one of the major work-related health problems (Eurofound, 2007a; EU-OSHA, 2009a; HSE, 2010; ILO, 2000). For this reason, several researches have focused on the nature of stress among different occupational groups, such as health care professionals (e.g., Russo et al., 2013; Jones et al., 2013), call center workers (e.g., Lewig & Dollard, 2003), teachers (e.g., Taris, Schreurs & Van Iersel-Van Silfhout, 2001). One business group which has received little attention in stress research is entrepreneurs.

Entrepreneurs are commonly seen as individuals who run small business and assume all the risk and reward of a given business venture, idea, or good or service offered for sale; they are business leaders and innovators of new ideas and business processes (Cunningham & Lischeron, 1991). Thus, entrepreneurs have a job with specific tasks and responsibilities, such as searching and recognizing business opportunities, acquiring resources, and creating new products or services (Douglas & Shepherd, 2000; Shane & Venkataraman, 2000; Patzelt & Shepherd, 2011; Shane, 2012). Moreover, entrepreneurship is characterised by high levels of uncertainty, change, responsibility and income uncertainty (Douglas & Shepherd, 2000). Starting from Job Demands-Resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), it is possible to say that entrepreneurs encompass job demands which are different from job demands associated with being employees: they share certain job demands with employees, but they may also be faced with specific job demands (Dijkhuizen, van Veldhoven, & Schalk, in press). For example, regular employee job demands include work pressure, task complexity, task conflicts, physical demands, cognitive demands, and emotionally demanding interactions with clients (Schaufeli & Bakker, 2004; Bakker & Demerouti, 2008). On the other hand,

besides having long work-hours, high time pressure, and role conflicts, entrepreneurs own a private business (with or without employees), have to react to many economic demands, and carry the full responsibility for success and failure of their enterprise. In addition, running a business is demanding and possibly stressful because of the uncertainty and risk involved (e.g., Boyd & Begley, 1987). For these reasons, it is possible to consider entrepreneurs to face a lot of stress in their task of running a business.

In the previous chapters, it was underlined that stress affects not only employees' health but it also has consequences for organizations (Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010; Sonnentag & Frese, 2012). While the detrimental effect of stress on employee well-being is well known (Jex, 1998), its effects on performance is less straightforward. However, scholars (Bakker, Demerouti, & Verbeke, 2004; Bakker, Van Emmerik, & Van Riet, 2008) have underlined that a decline in job performance is one of the organizational consequences of job stress: for workers, a decline in job performance can mean poor quality work or a drop in productivity, while for managers, it can mean faulty decision making or disruptions to working relationships (Jex, 1998; Leung et al., 2005). Several studies analyzed the relationship between job stress and job performance but the findings are controversial. Generally, job stress is often seen as dysfunctional in effect in that it decreases both the quality and quantity of job performance; it also wastes the time and energy that an individual spends dealing with the stressor, limiting concentration on the task at hand and thereby affecting performance (Siu, 2003). For instance, Jackson and Schuler (1985) established a negative relationship between role stress and job performance explaining this relationship throughout cognitive and

motivational research: role stress results in lower job performance since role stress includes lack of information and information overload; moreover, role stress weakens effort-to-performance and performance-to-reward expectancies (Tubre & Collin, 2000). Moreover, according to JD-R model, business outcomes are not directly determined by environmental conditions, but rather by the reaction of individual business owners to perceived stressors. Thus, job stressors tend to reduce the individual's capacity to exert control over their work environment, which, in turn, is supposed to adversely affect an individual's ability to function in an efficient way (Fried, Ben-David, Tiegs, Avital, & Yeverechyahu, 1998). Anyway, although the majority of empirical research results have shown a negative linear relationship between job stress and job performance (Gilboa, Shirom, Fried, & Cooper, 2008; Siu, 2003; Siu, Lu & Spector, 2013; Van Dyne, Jehn, & Cumming, 2002), there have also been studies in which a positive linear relationship or an inverted U relationship has been found (Meglino, 1977; Rauch, Unger, & Rosenbusch, 2007; Zajonc, 1965).

The most of researches on this field has focused on relationships between job stress levels and job performance of various professions, such as physicians (Richardson & Burke, 1991), construction site managers (Djebarni, 1996), nurses (Jeanie, 2001), teachers (Chaplain, 1995), police (Storch & Panzarella, 1996) and civil engineers (Lingard, 2003) but the impact of entrepreneurs stress on the business performance was seldom explored. In light of the previous considerations, we think that studying this relationship is interesting in entrepreneurship research, because it has both theoretical and practical relevance. For instance, managing stressful events successfully may result in a strong market position, success, and long term survival

of business. Thus, the main aim of this study is to examine the relationship between entrepreneurs' job stress and business performance.

During the years, several studies explored the relationship between job performance and other variables, such as job resources and personal resources. For instance, Bakker, Demerouti, & Verbeke (2004) found that extra-role performance is a reflection of the available resources in work environment such as autonomy, social support, and possibilities for self-growth. In addition, job-related affect has also been shown to influence several important forms of organizational behavior (e.g., Balducci et al., 2011) including quantity and/or quality of task performance (Staw & Barsade, 1993). Moreover, self-efficacy, intrinsic motivation and job satisfaction were factors that was studied by Olusola (2011) in order to investigate their influence on industrial workers performance in order to discover a way to increase employees' productivity in Nigerian industrial settings. The research study's results indicated that self-efficacy, intrinsic motivation and job satisfaction will predict the job performance of industrial workers. Finally, Leung and colleagues (2010) perceived support for innovation, which refers to the perception that management and coworkers encourage and support new ideas and innovative behaviour (Scott & Bruce, 1994), is related to innovative performance.

Starting from these evidences, the aim of this study is to examine the relationship between specific entrepreneurial job characteristics, personal resources, outcomes of stress process, and businesses performance.

Method

Participants

Participants in the study were 159 Italian entrepreneurs (97 men and 62 women; Figure 4.1) working in microenterprises in services sector of south Italy. For the purpose of this study an *entrepreneur* is defined as an individual who started the business and is currently an active manager of that enterprise (Buttner, 1992). The range age was 39-60 ($M = 39.50$; $SD = 10.46$). Almost 64.2% (102/159) of participants had higher secondary education, 15.7% (25/159) had a university degree or equivalent, and 20% (32/159) had lower secondary education (Figure 4.2). Most of the respondents (93/159; 58.5%) is married or cohabiting, while 32.1% (51/159) is single, and about 9% (15/159) is separated or divorced (Figure 4.3). Moreover, 40% (64/159) of participants reported that the financial turnover of own enterprise is decreased, 39% (62/159) is stable, and 21% (33/159) is increased (Figure 5.3).

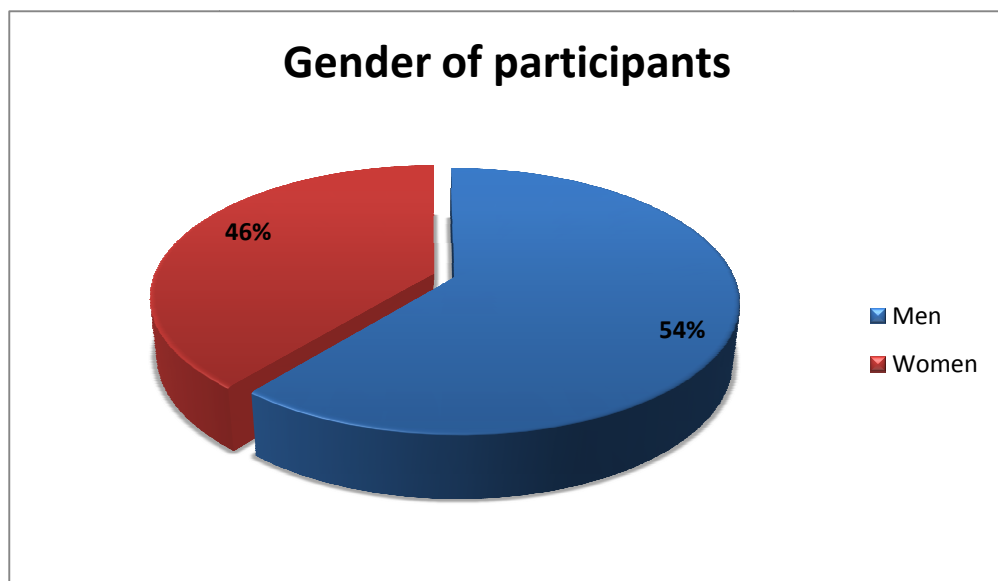


Figure 4.1. Entrepreneurs' classification on the basis of gender.

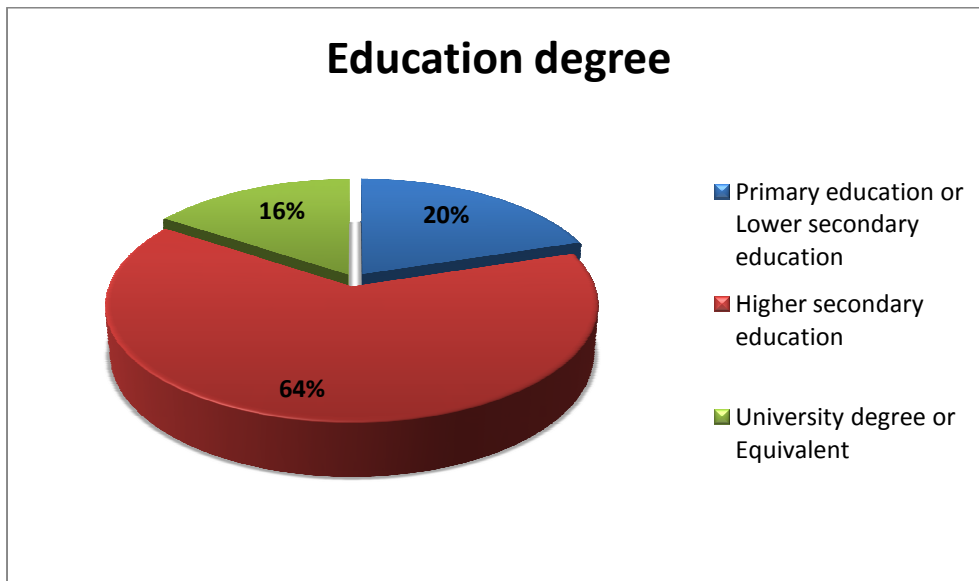


Figure 4.2. Entrepreneurs' classification on the basis of education degree.

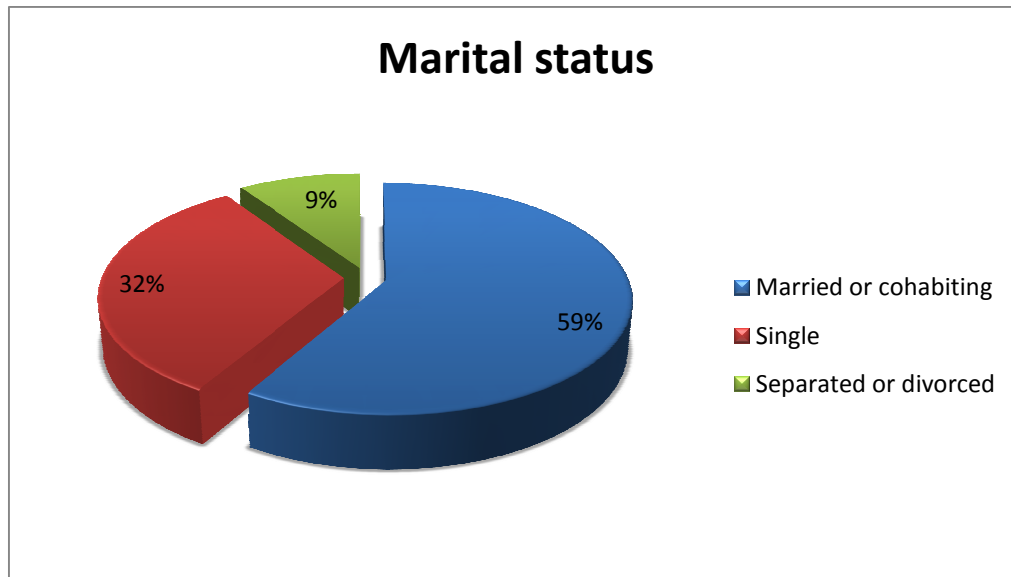


Figure 4.3. Entrepreneurs' classification on the basis of marital status.

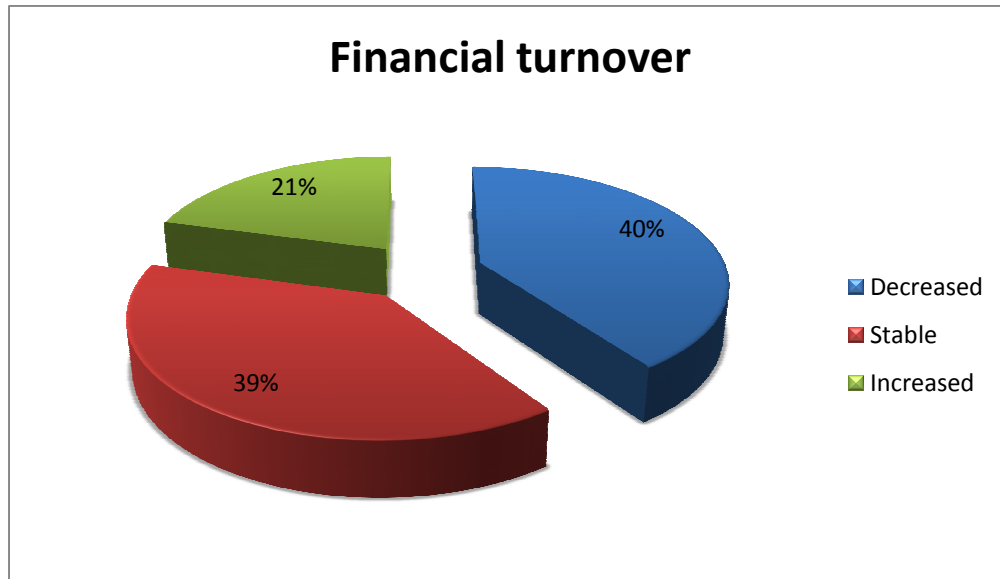


Figure 4.4. Entrepreneurs' classification on the basis of financial turnover of own enterprise.

Procedure

Participants completed consecutively self-report measures on job characteristics (specific entrepreneurial job demands and job resources), personal resources, and outcomes of work-related stress. They also provided information on their age, gender, and financial turnover of own enterprise prior to completing questionnaires. Researchers collected data during enterprise visits conducted in winter 2013. In particular, the companies were invited by the researchers to participate in the study on basis of company size and sector. The questionnaires were administered during the meeting vis-à-vis with entrepreneur. After a brief explanation about the purpose of the research, participants were motivated to complete the questionnaire. At the end of the data collection process, questionnaires were placed in envelopes and sealed. They received a report following data

collection. Research procedures described in this paper were performed in compliance with the American Psychological Association, the Italian Psychological Association ethical guidelines for research and the University's Internal Review Board guidelines.

Measure

Job demands

Uncertainty and risk (Dijkhuizen, van Veldhoven, & Schalk, in press) is measured by 6-item scale that refers to tolerance of and coping with uncertainty, and risk-bearing and courage. A 4-point answering scale was used for all items (0=never, 1=sometimes, 2=often, 3=always) in line with van Veldhoven et al. (2002). Using a 4-point scale is customary in measuring job demands. Item example: "Do you find it difficult to cope with uncertainty about the functioning of yourself as entrepreneur". Cronbach's alpha was .71 in the present study.

Job Resources

Employees support (van Veldhoven & Meijman, 1994; modified version) is referred to the quality of the relationship between employees and entrepreneur. Item example: "Do you get on well with your employees?". Cronbach's alpha was .70 in the present study.

Learning possibilities (van Veldhoven & Meijman, 1994; Trad. it. Pace et al., 2010) is measured by 4 items that refer to the perception that job offers you opportunities for personal growth and development. Item example: "Does your job

offer you opportunities for personal growth and development?”. Cronbach’s alpha was .75 in the present study.

Outcomes

Turnover intention (van Veldhoven & Meijman, 1994; modified version) is measured by a 3-item scale that refers to the entrepreneur’s personal estimated probability that he or she has a deliberate intent to quit the enterprise. Item example: “I sometimes think about leaving my job”. Cronbach’s alpha was .76 in the present study.

General health questionnaire (GHQ-12) is a measure of current mental health and since its development by Goldberg in the 1970s it has been extensively used in different settings and different cultures. The scale asks whether the respondent has experienced a particular symptom or behavior recently. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual); and for example when using the GHQ-12 it gives a total score of 36 or 12 based on the selected scoring methods. Item example: “Loss much sleep over worry”. Cronbach’s alpha was .80 in the present study.

Job-related affective well-being was assessed with 12 items based on Warr’s (1990) scale that investigate the frequency of experience of positive and negative affective states associated with an individual’s work across the previous few weeks, with responses given on a 4-point scale ranging from 1 (“Never”) to 4 (“Always”). We derived the following two six-item subscales: *negative affects* (e.g. “Tense”; “Worried”) that refers to the display and treatment of unpleasant emotions; *positive*

affects (e.g. “Contented”; “Relaxed”) that refers to the display and treatment of pleasant emotions. The scales were found to be an excellent predictor of work-related stressors and strains (Van Katwyk, et al., 2000). In the present study Cronbach’s alpha was .80 and .82 respectively.

Personal resources

Occupational self-efficacy scale (Schyns e von Collani, 2002) is measured by a 8-item scale that refer to the competence that a person feels concerning the ability to successfully fulfill the tasks involved in his or her job. A shortened version consisting of eight items was found to be a reliable and valid measure in a German sample (Schyns & von Collani, 2002). Items could be rated on a six-level response scale ranging from 1 (not at all true) to 6 (completely true). High values reflect high occupational self-efficacy. Item example: “When I am confronted with a problem in my job, I can usually find several solutions”. Cronbach’s alpha was .85 in the present study.

Innovation tendency (Borgogni, Petitta, Barbaranelli, 2004). It was assessed by 15 items that refer to the person’s tendency to new situations, think creatively and explore unfamiliar situations. Item example: “I like situations, ideas and original people”, rated on a 7-point Likert scale. Cronbach’s alpha was .83 in the present study.

Financial turnover is defined as the total value of goods or services sold by a company in a given period. It was assessed with an item on a three-level response scale ranging from 1 (decreased) to 3 (increased).

Data Analysis

We conducted preliminary analyses, including descriptive statistics of the key variable of the study. Moreover, a Multiple Correspondence Analysis (MCA) was performed in order to identify factors that determine business success. Thus, specific entrepreneurial job demands, specific entrepreneurial job resources, personal resources, outcomes of stress, and financial turnover were entered as active variables. MCA is a special technique of exploratory factor analysis that graphically displays multivariate categorical data (Benzécri, 1992). Seen as a generalization of principal component analysis for categorical variables, it allows researchers to analyze the pattern of relationships in a complex data matrix by replacing raw data with a simpler data matrix (Abdi & Valentin, 2007). Associations between variables are examined by calculating the chi-square distance between variable modalities and between individuals. These associations can then be represented graphically by plotting the projection of the rows and the columns onto the dimensions extracted by the factor analysis. If two categories have similar count patterns, their profiles will be closer together in the correspondence map and they will have closer co-ordinates on dimensions that account for most of the variance (Benzécri, 1973). The centroid represents the average profile. Hence, if points are located away from the centroid or the origin, then they are distinctly different from the average profile. In multiple correspondence analysis, the Cronbach's alpha can also be used to measure internal consistency or reliability among the variables. Thus, a higher value of the Cronbach's alpha coefficient implies that there is a relatively high internal consistency among variables. In summary, we selected MCA because it stems from a statistical strategy that makes it possible to simultaneously manage multiple variables

within a given system. It has the advantage of plotting the similarities and differences across the countries on a comprehensive graphic.

To conduct the MCA, continuous data for each of the variables of the study were reorganized into three categories: these categories represent values within 1 (low) and 3 (high). For instance, “Need for recovery 3” includes ratings above the third quartile on the need for recovery scale, whereas “Need for recovery 1” includes ratings in the first quartile. Results will be limited to the interpretation of the first two factors extracted by the MCA (Ben Ammou & Saporta, 2003). We computed the MCA on SPSS and XLSTAT software using the procedure described by Greenacre and Blasius (2006).

Results

Descriptive analyses for all variables are presented in Table 4.1. Fig. 4.1 illustrates the MCA two-dimensional space that represents specific entrepreneurial job demands, specific entrepreneurial job resources, personal resources, outcomes of stress, and financial turnover. MCA results are presented as follows: (1) interpretation of axes using contributions of the active variables to each factor; and (2) interpretation based on interpoint proximities in the two-dimensional map.

The first axis (λ_1) extracted by MCA, with an eigenvalue of $\lambda_1 = 3.23$ and 32.3% of inertia explained, bipolarly encompasses the following measures at the negative pole: high levels of negative affect, general dysfunction, need for recovery, and turnover intention. Moreover, it encompasses low levels of employees support, positive affect, opportunity to learn, occupational self-efficacy, and innovation tendency. At the opposite positive pole, the first axis encompasses the following

measures low levels of negative affect, general dysfunction, need for recovery, and turnover intention, and increased financial turnover. Moreover, it encompasses high levels of employees support, positive affect, opportunity to learn, occupational self-efficacy, and innovation tendency. Thus, the first axis includes job resources, outcomes of stress, and personal resources ranging from poor characteristics to good characteristics. Cronbach's alpha was .77 for the first axis.

The second axis (λ_2), with an eigenvalue of $\lambda_2 = 1.85$ and 18.5% of inertia explained, bipolarly groups high levels of uncertainty and risk and decreased financial turnover at the negative pole and low levels of uncertainty and risk and increased financial turnover at positive the pole. Cronbach's alpha was .65 for the second axis.

From Figure 4.1 it can be observed that the profile for businesses with decreased financial turnover falls in the top left quadrant of the graph, which is defined by negative poles of both axes. This quadrant is characterized by profiles of high levels of job demands, low levels of job resources and personal resources and high levels of perceived job stress. Therefore, entrepreneurs of businesses with decreased financial turnover perceive more job stress than entrepreneurs of businesses with increased financial turnover.

Conversely, businesses with increased financial turnover falls in the down right quadrant profile which is defined by by positive poles of both axes. This quadrant is characterized by profiles of low levels of job demands, high levels of job resources and personal resources and low levels of perceived job stress. It is interesting to note that businesses with increased financial turnover are falls

moderately in this quadrant suggesting that the increase of financial turnover is closer to the medium level of the key variables of the study.

Table 4.1. Descriptive analysis.

	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>SE</i>	<i>Kurtosis</i>	<i>SE</i>
Uncertainty and risk	14.01	3.86	0.20	0.18	-0.42	0.39
Learning possibilities	12.73	2.25	-0.58	0.19	0.09	0.38
Employees support	16.28	2.60	-0.74	0.19	0.86	0.38
Disfunctional factor	2.14	0.68	0.48	0.17	-0.50	0.37
Need for recovery	23.65	5.51	0.21	0.19	-0.29	0.38
Turnover intention	5.16	2.25	0.88	0.18	-0.05	0.38
Positive affect	2.75	0.57	-0.26	0.19	0.03	0.36
Negative affect	2.10	0.61	0.81	0.19	1.09	0.38
Tendency to innovation	75.02	15.11	-0.66	0.18	0.83	0.38
Occupational self-efficacy	4.49	0.94	-0.64	0.19	-0.13	0.37

N = 159.

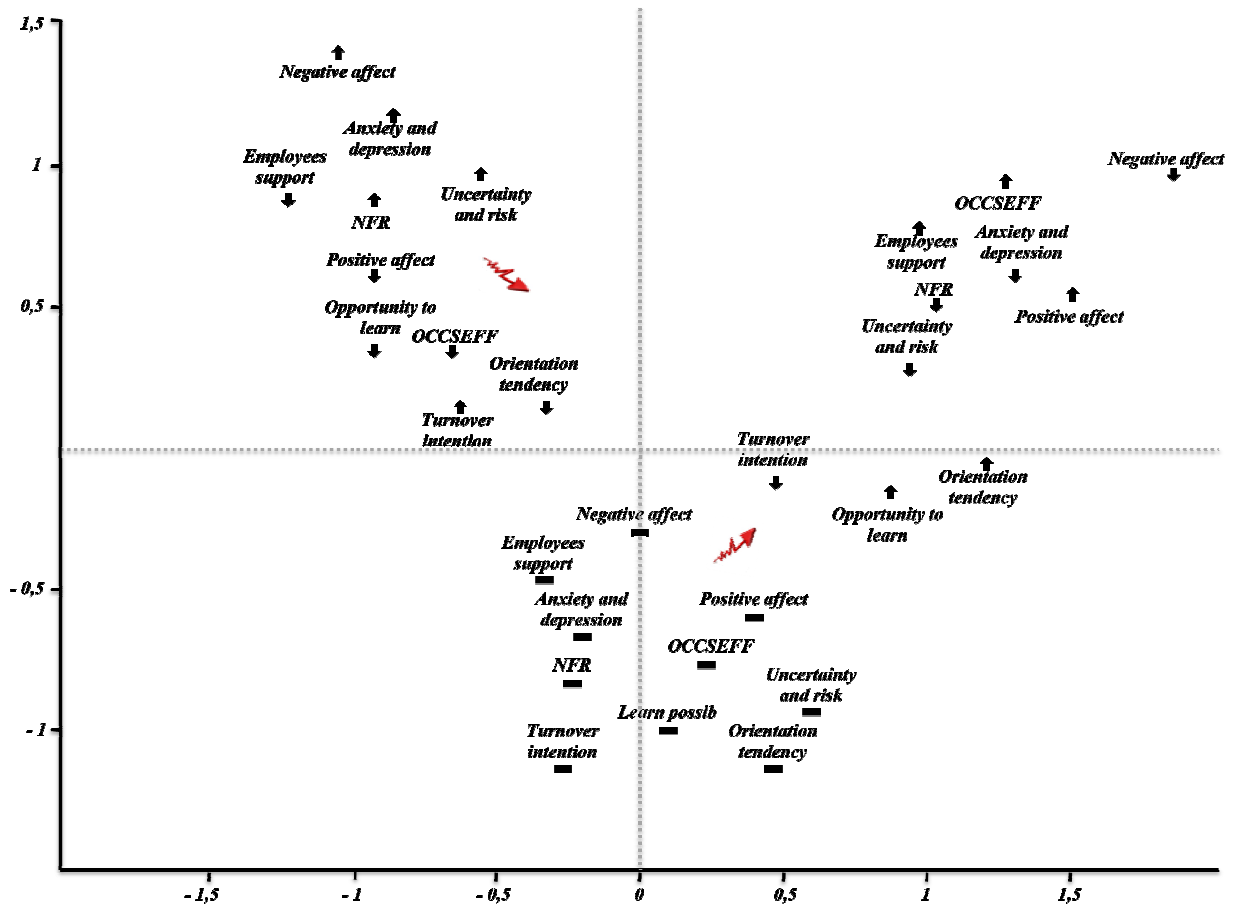


Fig. 4.1. Multiple correspondence analysis.

Notes: ↓ represents value 1 (low), ↑ represents level 3 (high), and ■ represents level 2 (moderate) for each of the variables of the study; Negative affect = Negative affect, Employees support = Employees support, Anxiety and depression = Anxiety and depression, NFR = Need for recovery, Positive affect = Positive affect, Learn possib = Learning possibilities, OCCSEFF = Occupational self-efficacy, Turnover intention = Turnover intention, Orientation intention = Uncertainty and risk = Uncertainty and risk. The different arrow-shaped object indicates financial turnover

Discussion and Conclusions

The objective of the study was to identify factors that determine business success. In particular, the fundamental question motivating the present research was: Does the job stress of entrepreneurs influence the job performance of business? Researchers discussed about the link between job stress and job performance the results were inconsistent. Results of the present study showed the factors that determine business success using the multiple correspondence analysis that it makes the visual interpretation easier. Some of the categories are grouped around the business success and some are grouped around business loss.

Particularly, present data highlighted that entrepreneurs of businesses with decreased financial turnover showed higher level of negative affect, general dysfunction, need for recovery, and turnover intention than entrepreneurs of businesses with increased financial turnover. Moreover, they showed also lower levels of employees support, positive affect, learning possibilities, occupational self-efficacy, and innovation tendency than entrepreneurs of businesses with increased financial turnover. Therefore, stressful working conditions not only turn up the pressure on employees and bring about health concerns, but also affect their job performance. These results are in line with previous researches that argued for a negative relationship between stress and performance (Gilboa et al., 2008; Siu, 2003; Van Dyne et al., 2002; Wu, 2011). For instance, in a recent study with 260 Dutch agricultural business owners, Gorgievski and colleagues (2010) found that farmers' diminished motivation to continue had a negative impact on the objective financial situation of the business over time. In accord with the authors, it is possible speculate that when entrepreneurs anticipate business closure, they start adjusting their

business goals downward and therefore deteriorating the objective financial situation of the business. Following studies confirmed these results highlighting that up to 3 years before business closure, entrepreneurs stopped investing and started downsizing, leading to a decrease in financial performance (Almus, 2004; Van der Veen, Van Bommel, & Venema, 2002).

However, it is interesting to note that the increase of financial turnover is closer to the medium level of the key variables of the study. It could be that insufficient stress, perceived as a stimulus-impooverished environment, can be understimulating inducing boredom, a lack of concentration, and a lack of initiative/motivation to contribute the best possible effort (Varhol, 2000). Thus, these results are in line with previous researches found that a moderate level of stress produces a positive impact on performance (Djebarni, 1996).

In addition, our results are in line with the growing body of knowledge for the key role of psychological well-being in the prediction of financial problems (Gorgievski-Duijvesteijn et al., 2000) and individual performance (Wright, Bonett, & Sweeney, 1993). In detail, anxiety and depressive symptoms have been found to impair information processing and decision making that may not be appropriate when facing major environmental changes (Ocasio, 1995). Hence, poor well-being is expected to impair objective business performance. Moreover, lower job resources and lower personal resources are linked with experienced financial problems. These results are in line with previous researches (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2012) highlighting the important role of resources on organizational behaviors. According to JD-R model, lack of resources can prevent individuals from coping with the job demands and to perform well (Bakker & Xanthopoulou, 2009;

Luthans et al., 2010). Recently, in a study with 533 employees of different organizations, Torrente and colleagues (2012) examined the associations between resources, engagement, and performance at the team level. The authors found that social resources are related to team performance and in particular engagement mediated this association. Moreover, Judge, Bono, and Locke (2000) argued that employee core self-evaluation – a combination of self-esteem, generalized self-efficacy, locus of control, and low neuroticism – determines the way they perceive their job characteristics, which in turn would impact on job satisfaction and performance.

Summarizing, the present results suggest that microenterprises can gain more profit if the environment in which they operate is improved. Moreover, the present study highlights the importance of understanding the antecedents and consequences of entrepreneurs' job stress since this phenomenon holds the potential of withdrawal from a new business.

Limitations, Strength, and Practical implications

Some limitations of the present research are noteworthy, all of which suggest rewarding avenues for further research. The first limitation is its lack of generalizability to the entire working population because it was used a non-probability sampling methods (i.e., availability sampling). Despite this method reduces the external validity of the study, non-probability sampling methods are often used in qualitative research or in quantitative studies when researchers are unable to use probability selection methods. Nevertheless, for future research it is better to define the population first, and then obtain a random sample. The second

limitation is the cross-sectional nature of the data, which entails that we cannot draw any conclusions regarding the direction of the causal flow between variables. Therefore, longitudinal data are needed in the work stress area for clearly shows which factors have causal effects on health and organizational outcomes. The third limitation of the present study is that all the data are self-reported, which may imply a bias due to common method variance (Podsakoff et al., 2003). Despite we have provided some evidence that common method variance may have not been a critical factor for the current findings, studies with objective reports are needed in this field.

Although we cannot draw causal conclusions, this study provides evidence for a link between entrepreneurs' job stress and businesses performance. The present study has also practical implications. One of the implications is that a focus on reducing job stress might prove useful in enhancing individual and organizational effectiveness. Several strategies could help entrepreneurs reduce stress. For instance, it could be accomplished by specific training for entrepreneurs in order to manage negative emotions and uncertainty and risk related to entrepreneurial position. In particular, to reduce the pressures of decision-making responsibilities, entrepreneurs could delegate routine decision making whenever possible. Entrepreneurs can appoint advisory boards for regular consultation, particularly in the early stages of the business, to relieve pressure from the weightiness of decision making (Buttner, 1992). Moreover, entrepreneurs also might increase the job resources; for instance, under the present adverse economic conditions they could network with their employees. In conclusion, our findings refine the conclusion of previous research demonstrating that a relationship between entrepreneurs' job stress and businesses performance exists.

GENERAL CONCLUSION

Given that the most of workers spend around half their waking hours at work, it becomes an important avenue for health. Several researchers are in accord with the statement that work plays a large part in people's sense of well-being and it has major implications for social, economic, and personal prosperity. In today's societies, work is undergoing a fundamental redefinition caused by factors such as globalization and new technologies; these changes increased prevalence of new and emerging types of risk to workers' health and safety (De Jonge & Kompier, 1997; EU-OSHA, 2010; INAIL, 2010; Le Blanc, De Jonge, & Schaufeli, 2008). One of the most prominent causes of impaired psychological well-being is work-related stress (EWCS, 2000). For these reasons, it seems particularly relevant to gain more insight in such a problem and its implications.

In light of these considerations, the central aim of this dissertation was to give a significant contribution to the understanding of work-related stress. Specifically, the main aims of the present dissertation were: (a) to provide supports for future research in the Italian context, examining the psychometric characteristics of a measures of job-related affective well-being; (b) to examine, within the JD-R model, whether certain working conditions can play a key role within the stress process and, more in detail, whether job-related affect can mediate the relationship between job characteristics and outcomes of job stress; (c) to explore the relationship of job stress and specific working conditions with business performance in a group of entrepreneurs of microenterprises.

In particular, Chapter 2 intended to contribute to the understanding and measurement of affective well-being. Specifically, it examined the properties, in terms of reliability and factor structure, of the Italian version of job-related affective well-being (Warr, 1990a). In accord to previous researches (Gonçalves & Neves, 2011; Mäkikangas et al., 2007; Watson & Tellegen, 1985), confirmatory factor analyses supported a four-factor structure (anxiety, comfort, depression and enthusiasm), as well as a five-factor structure including the same four factors plus a second-order factor called global affective well-being; moreover, the second-best model was the correlated two-factor model in which the positive and negative items loaded on their own factors. In addition, the internal consistency indices of the factors were good.

Globally, our results showed that the Italian translation of the scale is a valid and reliable instrument for the evaluation of job-related affective well-being. Furthermore, these findings add to the understanding about job-related affective well-being since they provide empirical support in assessing it in the Italian context, where there was a lack of studies on this phenomenon. The main relevance of this study is that it focused on a specific measures which can be used among workers from different professions and can answer to different research purposes.

Chapter 3 was aimed at investigating the relationship between job characteristics and outcomes of stress process in order to understand which job characteristics predict both turnover intentions and organizational commitment in employees of service sector. Specifically, on the basis of the Job Demands-Resources model (JD-R; Bakker & Demerouti, 2007), the study presented in this chapter tried to analyze the role of job-related affect, focusing on its potential role of mediator in the

relation between job characteristics and outcomes of work-related stress. The results of SEM analysis supported our hypotheses, indicating that the model fitted the data well, with all the structural relations being in the expected direction. We found evidence for a mediating effect of job-related positive and negative affect in the relationship between job resources-organizational commitment and job demands-turnover intentions respectively, although it were partial rather than full mediations. These findings are innovative and relevant as they indicate that job-related affective experiences may play a crucial role in the health impairment and motivational processes theorized by JD-R model. The role of emotions in the workplace has long been neglected; yet an increasing number of studies, including the present one, suggest that they may be of crucial importance in determining both positive and negative outcomes at work. Moreover, These findings highlight that an overarching job demands factor consisting of workload, emotional demands, role conflict, and role change was related to turnover intentions, while an overarching resources factor consisting of colleagues and leaders support, opportunity to learn, and task autonomy was related organizational commitment. Therefore, the study is significant at a theoretical, but also at a practical level, since it leads to consider how important is to address this underestimated phenomenon at both individual and organizational levels.

Finally, Chapter 4 intended to investigate the relationship of specific entrepreneurial job characteristics, personal resources, outcomes of stress process with businesses performance. Several studies analyzed the relationship between job stress and job performance but the findings are controversial (Gorgievski et al., 2010; Siu et al., 2013). In addition, despite its importance, the literature gives little

attention to the entrepreneurs' job stress. The present results showed the factors that determine business success using the multiple correspondence analysis that it makes the visual interpretation easier. Particularly, data highlighted that entrepreneurs of businesses with decreased financial turnover showed higher level of negative affect, general dysfunction, need for recovery, and turnover intention than entrepreneurs of businesses with increased financial turnover. They showed also lower levels of employees support, positive affect, learning possibilities, occupational self-efficacy, and innovation tendency than entrepreneurs of businesses with increased financial turnover.

These preliminary findings are relevant for different reasons. Firstly, they are in line with previous researches that argued for a negative relationship between stress and performance (Gilboa et al., 2008; Siu, 2003; Van Dyne et al., 2002; Wu, 2011). Finally, they added to the literature since they confirmed the stressful working conditions not only turn up the pressure on individuals and bring about health concerns, but also affect the organizational performance. Summarizing, the present study suggests that microenterprises can gain more profit if the environment in which they operate is improved. Moreover, it highlights the importance of understanding the antecedents and consequences of entrepreneurs' job stress since this phenomenon holds the potential of success of a new business.

Limitations and needs for future research

Despite the original findings presented so far, this dissertation has also some limitations. Therefore, studies limitations and some needs for future research can be mentioned. The first limitation is that the studies presented above were cross-

sectional designs, which excluded the possibility to draw any conclusions in terms of causal effects in the relationships tested. Therefore, in the future, more longitudinal research or diary studies are needed, especially to replicate previous findings and verify their causality. For this purpose, also reversed and reciprocal effects between study variables should be considered.

The second limitation is that all studies used only single-source self-report data, which raises questions about common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This is considered a recurrent issue in research on Work and Organizational Psychology (Spector, 1992). Multiple types of data needed include, besides self-report, collateral reports of supervisors, colleagues and family, as well as objective rates and company health system utilization (Burke, 2000), in order to minimize the potential effects of common method variance.

A third limitation of the studies concerned sample selection, since convenience samples contacted throughout snow-ball exercise were used. Consequently, samples were heterogeneous and possibly not representative of the working population at large. Nevertheless, findings should be replicated in specific organizations and working places, in order to identify more contextualized conclusions and practical implications.

Finally, none study proposed qualitative methods or multidisciplinary approach, which could be particularly helpful. Moreover, some more variables could be considered in the studies to extend their general research purposes. For instance, the third study did not take into account some personal resources, although they can play an important role in stress process (Xanthopoulou et al., 2007).

Implications for practice

In general, this dissertation confirmed that work-related stress is a complex and multi-dimensional phenomenon with the potential to negatively impact the individual and organizational health. Therefore, individuals and organizations must understand the problem, its causes and consider viable solutions. There are a number of ways in which work-related stress could be reduced. They include:

(a) *primary prevention* that requires to deal with the source of risk (e.g., ergonomics and work; environmental design);

(b) *secondary prevention* that concerns with the ability of people to cope with workplace stressors (e.g., worker education; training);

(c) *tertiary prevention* focus on injury management, rehabilitation and return to work processes (e.g., psychological counseling or psychotherapy).

However, a risk management process must be integrated all these approaches and interventions.

Specifically, the present dissertation has some practical implications. For instance, the third study particularly underlined the role of organizations in dealing with some job characteristics: results, indeed, suggested the potential role of job demands in increasing turnover intentions and the potential role of job resources in increasing organizational commitment. Therefore, organizations should guarantee a balance between job demands and adequate resources. Moreover, the study highlights the important role of the job-related affect in stress process. Organizations should become more sensitive to the (positive and negative) emotions of their employees. They could, for example, train their managers to identify and deal with the negative affective reactions of their employees and to foster positive affective

experiences at work. They could also train employees to become more sensitive to their own affective experiences and perhaps able to manage them constructively and effectively.

In addition, the last study suggested that entrepreneurs' stress is related to business performance. Thus, it could be important to organize specific training for entrepreneurs in order to manage negative emotions and uncertainty and risk related to entrepreneurial position. In particular, to reduce the pressures of decision-making responsibilities, entrepreneurs could delegate routine decision making whenever possible. Entrepreneurs can appoint advisory boards for regular consultation, particularly in the early stages of the business, to relieve pressure from the weightiness of decision making (Buttner, 1992). Moreover, entrepreneurs also might increase the job resources; for instance, under the present adverse economic conditions they could network with their employees. Summarizing, it is important to reduce job stress in order to improve individual and organizational effectiveness.

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