





# Positive Factors at Work

The First Report of the Nordic Project

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**Positive Factors at Work**

The First Report of the Nordic Project

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# Preface

It is difficult to understand the factors that create health, balance and meaningful lives through studying sickness, dissatisfaction and suffering (Snyder & Lopez, 2007). Research on work and organizational psychology has been occupied primarily with the strains experienced in the workplace, e.g. stress, burnout, sick leave, turnover, and negative health symptoms. This research hopefully will contribute towards interventions aimed at the prevention of negative events at work, and therefore be of significance for future research. In the previous five years there have been increasing demands for an equivalent focus on the positive factors at work, namely those leading to job satisfaction, engagement, good health, and productivity. A central hypothesis in this research is that job satisfaction, engagement and good health are not simply the opposite of dissatisfaction, burnout and ill health. If one wants to create a good and healthy work environment it is not sufficient just to remove the negative aspects or reduce the workload, one also will have to add something positive. This is also underlined by the global tendencies in work life, where there are constantly increasing demands and changes affecting workers, leading to new challenges and increasing job insecurity, which in turn may have negative impacts on workers' health. It is not realistic simply to stake a lot on reducing the demands at work. Changes and job insecurity also seem likely to be an ever present feature of our work environment in the future. However, there seem to be good opportunities for different positive factors at work to modify the negative impacts through various positive mechanisms. There has been a need for a corresponding positive change of focus in psychological research. The main aim of the present project, 'Positive factors at work', is to develop theory and methods concerning positive factors at work adapted to Scandinavian working conditions. The project started in January of 2006 and is planned to have duration of three years. The project is cooperation between researchers from Norway, Sweden, Finland and Denmark. Our aims in this report are to give an overview of existing Nordic projects focusing on positive factors, both theoretically and methodologically, and to build a theoretical model for studying positive factors at work. In the second year of the project our aims are to show the psychometric validity of the chosen positive constructs in Nordic data sets and to develop a Nordic standard for the investigation of positive factors in the context of work. In the third year our goal is to carry out a pilot study in at least one of the Nordic countries based on the project's previous findings.



# Abstract

The report is based on the project 'Positive factors at work' financed by the Nordic Council of Ministers. The project is a joint venture project between the Nordic countries of Norway (Department of Psychology at the Norwegian University of Science and Technology; The Norwegian Business School), Sweden (Department of Psychology at the University of Stockholm), Denmark (The National Research Centre for the Working Environment in Denmark), and Finland (The Finnish Institute of Occupational Health).

Working with an overview of existing data from projects in these 4 countries, the main aim of this project is to develop theory and methods concerning positive factors at work adapted to Scandinavian working conditions. The project started in January 2006 and is planned to last for 3 years. The first report presents an overview of the included projects focussing on positive factors at work in the respective countries. The aim of the report is to give a theoretical and methodological overview of existing Nordic projects about positive factors, and to construct a theoretical working model for further work on the project.

The report starts with an introduction to positive psychology, explaining what it is, defining it, and arguing why this focus is needed. The authors introduce positive factors at work from both a micro perspective and a macro perspective. It is argued that the absence of negative work characteristics does not necessary imply job satisfaction and engagement, because these are also the result of positive experiences. Thus, it is important to look at positive factors which increase job satisfaction and engagement because these relate to employees' productivity and levels of concentration, and also enhance cooperation between employees. The starting point is that positive experiences should be a favoured area for researchers and organizations wanting to promote good and productive work environments. The new and positive focus also gives some interesting answers to some of the challenges facing Nordic welfare societies.

The introduction is followed by descriptions of the different projects. Each of the descriptions includes the purpose of the study, design and study sample, data collection, and an overview of the main positive study variables.

The report finishes with some concluding remarks and a proposal for a theoretical model which will serve as the basis for the next 2 years of the project. It is concluded that to produce well-being and good health in employees the focus needs to be changed from risk factors and negative health symptoms and that additions should be made to our knowledge of what really promotes motivation, well-being, long-term good health and

good job performance. An important part of the conclusion is the presentation of a working model with positive factors at work to be used as a starting point for further research, including antecedents, mediators and consequences.

# 1. Introduction

## 1.1 Positive psychology

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What is positive psychology? Why is there a need for positive psychology? Psychological research has always been mainly occupied with negative subjects such as pathology and treatment of illnesses. There are several explanations for this focus. One is that negative emotions require more urgent attention compared to positive emotions, and according to evolutionary scientists, make more sense in relation to immediate action when faced with danger. History also reveals some explanations for this negative focus. In the past, when societies faced military threats, poverty, and instability, they would focus on how to defend themselves and limit the damage (Seligman & Csikszentmihalyi, 2000). When Martin Seligman became President of The American Psychological Association (APA) in 1998, he introduced the concept of 'positive psychology', a science containing three pillars: positive subjective experience, positive individual traits, and positive institutions (Seligman & Csikszentmihalyi, 2000). Positive psychology turns the negative focus in psychology around to look at what makes people flourish and function optimally (Gable & Haidt, 2005). *The Journal of Positive Psychology* gives the following definition of positive psychology: '*Positive psychology is about scientifically formed perspectives on what makes life worth living. It focuses on aspects of the human condition that lead to happiness, fulfilment and flourishing* (Linley, Joseph, Harrington & Wood, 2006, p. 5).

Gable and Haidt (2005) explained the vast popularity and growth of positive psychology in the previous seven years as filling a need. It is difficult to understand the factors that create health, balance and meaningful lives through studying sickness, dissatisfaction and suffering (Snyder & Lopez, 2007). Yet although there seemed to be a need for a change of focus in favour of the positive, positive psychology has also been subject to a lot of criticism and scepticism. The main critique concerns whether if this is positive psychology, the rest of psychology is negative psychology. However, this is not what is meant by positive psychology and there are several historical incidences of evidence to the contrary. The historical trends of positive psychology can be traced back as far as the early philosophers, but subsequently became an integral part of psychology, to the extent that it was unrecognized and not emphasized. Some examples of early positive psychology are William James' studies of

healthy mindfulness from 1902 and Maslow's study of healthy individuals and self actualization (Maslow, 1968). In order to redress the imbalance between negative and positive topics in psychological scientific publications, the focus of positive psychology is aimed at all of the different fields in psychology.

Seligman and Csikszentmihalyi (2000) considered that the aim of positive psychology was to initiate a change towards looking at positive qualities in order to understand human beings as not only being preoccupied with focussing on the worst things in life. A positive psychological approach should give us a more whole and broad psychology, including our experiences of loss, suffering, sickness, and distress, and also our experiences of fulfilment, well-being and positive health. There has been a growing interest in positive psychology in recent years, in both the US and Europe. *The Journal of Positive Psychology* has been established for scientific papers concerned with positive psychology, and we already have the *Journal of Happiness Studies* which is a peer-reviewed scientific journal devoted to subjective well-being. A Master's in Positive Psychology has been developed at the University of Pennsylvania. In addition, a number of books and articles have been written and several conferences held on the topic. In Scandinavia, NTNU in Norway started their first Master's course in Positive Psychology in the spring of 2007.

Today, positive psychology is at a crossroads. Linley, Joseph, Harrington and Wood (2006) have discussed the possible different ways forward in the future. Their first suggestion is a meta-psychological integration, indicating an integration of positive psychology into existing professional psychology. This means that positive psychology as a discipline in its own right would disappear and become integrated as a natural element in all other disciplines in psychology. Their second suggestion is integration with continued specialization. This indicates structural barriers to full integration, where efforts still should be to continue to readdress the imbalance between research on 'negative' and 'positive' psychology. The third way forward suggested is marginalization, where positive psychology would be a separate discipline. However, Linley et al, 2006 concluded that the main goal of positive psychology should be to disappear when it is integrated into all areas of psychology. It should not be a stand-alone discipline, but rather used to complete our knowledge in psychology, concerning both the negative aspects and the positive aspects of our lives.

Concerning Seligman's three original pillars of positive psychology, research to date has mainly concentrated on the first two, namely positive subjective experience and positive individual characteristics (strength and virtues). The third pillar, positive institutions or communities, has not received so much attention (Linley et al., 2006). Could the reason for this be the psychological focus? Linley et al. (2006) raised the issue of whether this could be an interesting follow-up question for positive soci-

ology or positive anthropology. Positive psychology needs to look further at all aspects of strength and virtues, positive situations, and institutions, and see how in a complex way they contribute to physical and mental health, satisfaction, and positive institutions, so that we can develop effective interventions.

Research literature on work and organizational psychology has focused on the negative effects of the work environment, particularly stress, burnout, sick leave, and strain, or, more generally, pathology and how to prevent illness or heal the wounded (Nelson and Simmons, 2003). There seems to be a lot of work still to be done in the positive direction, concerning all levels of an organization.

## 1.2 Positive psychology in work – a micro perspective

*Karoline Hofslott Kopperud, Norwegian School of Management*

### *1.2.1 Positive Organizational Scholarship*

Work is one of the most significant areas of people's lives. Positive psychology at work can be divided into a micro perspective, concerning the individual's positive resources related to work, and a macro perspective, concerning work as a positive institution, also from a community perspective.

More specifically for organizational psychology at a micro perspective, positive psychology is about motivating, encouraging, and developing employees by doing more than reducing negative work characteristics, such as stress. Positive 'organizational' psychology is about exploring *positive* experiences and what is good in working life. This implies strengthening the positive resources latent in human beings.

Positive Organizational Scholarship (POS) is concerned with the study of positive outcomes, processes, and the attributes of organizations and their members. POS does not represent a single theory, but rather, it '*represents an expanded perspective that includes instrumental concerns but puts an increased emphasis on ideas of "goodness" and positive human potential*' (Cameron, Dutton, & Quinn, 2003, p. 4). Cameron et al. (2003) direct the focus of POS to enablers, motivations, and outcomes or effects associated with positive phenomena. Furthermore, the authors argue that POS is distinguished from traditional organizational approaches in that it seeks to understand the best in the human condition. POS substantially draws upon literature and research from positive psychology, and thus can be argued to represent a positive psychology of organizational studies.

### *1.2.2 The processes of positive experiences – Positive Organizational Behaviour*

Luthans (2002, p. 59) defines POB as ‘the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today’s workplace’. According to Luthans (2002), positive organizational behaviour (POB) is constructed by positive reinforcement, positive affect, and positively oriented attitudes among employees. Thus, POB focuses more on the micro-level and on the state-like, open-to-development psychological capacities, compared to macro-level POS (Luthans & Avolio, 2003). Luthans (2002) further argues that POB poses the criterion of being related to performance improvement in the workplace, which differentiates it from being a purely personal development idea. Luthans (2002, p. 698) criticizes POS for focusing on positive constructs as ends in themselves for today’s organizations. Thus, in the desire to help organizations do better, POB appears to be an important and valuable umbrella of constructs for investigation. In this respect, Luthans (2002) argues that POB consists of various qualities of experience, involving constructs such as self-efficacy, meaning, hope, optimism, emotional intelligence, and subjective well-being.

Such knowledge could improve our understanding of job satisfaction and work engagement, given a continuous and enhancing effect on intrinsic motivation (Seligman & Csikszentmihalyi, 2000). Job satisfaction and engagement is not present only because negative work characteristics are absent, but also because of positive experiences are present. Job satisfaction and engagement can increase employee productivity and concentration, and further enhance cooperation *between* individuals. Consequently, positive experiences should be a favoured area of interest for organizations wanting to promote good and productive working environments.

## 1.3 Positive psychology as an answer to the challenges facing the Nordic welfare societies

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### *1.3.1 Challenges facing the Nordic welfare societies*

Nordic welfare societies are currently facing two main challenges. The first challenge stems from the changes in the demographic composition of the Nordic countries (Nordic Council of Ministers, 2006, p. 61). These demographic changes may, in combination with widespread early retirement from the labour market (Nordic Council of Ministers, 2006, p. 109), result in a shortage of labour in the Nordic countries in the coming dec-

ades. As will be shown in the following, the field of positive work and organizational psychology appears to offer some interesting insights in response to this challenge, as the knowledge generated within the field of positive psychology may contribute to increase labour supply through its emphasis on building on factors related to intrinsic job motivation (Turner, Barling, & Zacharatos, 2002). The issue of labour supply is traditionally approached in terms of establishing economic incentives but an alternative strategy towards increasing labour supply is offered by the field of positive psychology.

Another challenge that confronts the Nordic countries is related to the consequences of the terms of competition in an increasingly globalized economy. The dynamics of a globalized economy have contributed towards increasing the work-related demands experienced by the labour force. Firstly, the pace of skill change and the frequency of organizational reorganizations have increased job insecurity. Secondly, the competitive pressure of a globalized economy and a tendency towards increased worker autonomy in the production process entails an increased pressure on the employees to perform (Esping Andersen, 2002). Certainly, these developmental tendencies will have an impact on the well-being of employees in the contemporary labour market. Thus, in order to counter the increasingly stressful nature of contemporary work life (Ferrie et al., 2001), it appears crucial to focus on the development of a series of positive work-life resources that may increase employees' abilities to cope with work-related demands.

### *1.3.2 Positive Psychology as a solution to the challenges ahead*

As stated in Section 1.3.1, positive psychology provides some interesting responses to the challenges confronting Nordic welfare societies.

From the perspective of positive psychology, concurrent experiences of positive affects are viewed as the fuel in processes that enhance individual and collective experiences of well-being, engagement and human growth (Frederickson & Losada, 2005; Gable & Haidt, 2005). According to Meyer and Allen (1997), experiences of positive affects are negatively correlated with turnover intentions, whereas they are found to be positively correlated with job performance. Furthermore, research into the implications of positive experiences shows that experiences of positive affects are associated with creativity (Isen, Daubman & Nowicki, 1987) and intuition (Bolte, Goschkey, & Kuhl, 2003). Also, Frederickson and her colleagues have found that concurrent experiences of positive affects result in increases in individual resilience (Frederickson, Tugade, Waugh, & Larkin, 2003). Meyer and Allen (1997) have found that positive experiences at work increase individual's capacity to cope with stress and promote effective organizational commitment. In addition, studies of Finnish teachers and dentists show that various energizing job resources

not only mitigate the negative impacts of job demands and work-life changes on work engagement but also they seem to boost work engagement, particularly when the job demands are high (Hakanen, Bakker, & Demerouti, 2005; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007).

The central concepts of positive psychology are not entirely new in a Nordic context. In the Nordic countries we have a long tradition of studying several positive aspects at work. In this respect we can mention three significant research works: Gardell, Aronsson, Svensson and Leymann's (1987) studies of experiences of joy at work, Levy's (2002) studies of eustress, and Thorsrud and Emery's (1970) studies of autonomous teams.

Thus, creating a working environment that draws upon the knowledge generated within the field of positive psychology may contribute to the ability of the Nordic welfare societies in meeting the aforementioned labour market challenges, both now and in the future. However, in order to reap these rewards it is important to study the experiences of positive effects in a variety of work settings.

A common denominator for the studies that will be presented in the second part of this report is an interest in the antecedents for and the conditions under which people are likely to have different types of positive work experiences within a variety of work places and lines of business.

Finally, it should be noted that the Nordic welfare societies are attributed with an advantageous historical heritage in terms of a high degree of democratic participation, and also a high level of social capital in terms of interpersonal trust and organizational justice (Svendson, 2005). This heritage may prove conducive to the evolution of healthy work organizations, reflecting the processes and outcomes described by proponents of positive psychology.

## 1.4 References

- Bakker, A., Hakanen, J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99(2) 274–284.
- Bolte, A., Goschkey, T., & Kuhl, J. (2003). Emotion and intuition: Effects of positive and negative mood on implicit judgements of semantic coherence. *Psychological Science*, 14(5), 416–421.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (2003). *Positive organizational scholarship*. San Fransisco: Berrett-Koehler.
- Esping Andersen, G. (2002). *Why we need a new welfare state*. Oxford: Oxford University Press.
- Ferrie, J. E., Shipley, M. J., Marmot, M. G., Martikainen, P., Stansfeld, S. A., & Smith, G. D. (2001). Job insecurity in white-collar workers: Toward an explanation of association with health. *Journal of Occupational Health Psychology*, 6(1), 26–42.
- Fredrickson, B. L., & Losada, M. F. (2005). Positive affect and the complex dynamics of human flourishing. *American Psychologist*, 60(7), 678–686.
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What are good emotions in crisis? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of*

- Personality and Social Psychology*, 84(2), 365–376.
- Gable, S. L., & Haidt, J. (2005). What (and why) is positive psychology? *Review of General Psychology*, 9, 103–110.
- Gardell, B., Aronsson, G., Svensson, L., & Leymann, H. (1987). *Forskning för framtidens arbetsliv: en minnesbok till Bertil Gardell*. Stockholm: Prisma: samarbete med arbetsmiljöfonden.
- Hakanen, J. J., Bakker, A. B., & Demerouti, E., 2005. How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences*, 113, 479–487.
- Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology*, 52(6), 1122–1131.
- James, William (1902) *The Varieties of Religious Experience*. London and New York: Longmans and Green, 1902
- Levy, L. (2002). *Stressen i mitt liv*. Stockholm: Natur och kultur.
- Linley, P. A., Joseph, S., Harrington, S., & Wood, A. M. (2006). Positive psychology: Past, present, and (possible) future. *The Journal of Positive Psychology*, 1(1), 3–16.
- Luthans, F. (2002). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Executive*, 16(1), 57–72.
- Luthans, F., & Avolio, B. (2003). Authentic leadership development. In Cameron, K. S., Dutton, J. E., & Quinn, R. E. (Eds.), *Positive organizational scholarship*. San Francisco: Berrett-Koehler.
- Maslow, A. H. (1968) *Toward a psychology of being* (2nd ed.). Princeton, NJ: Van Nostrand.
- Meyer, J.P., & Allen, N. J. (1997). Commitment in the workplace. Theory, research and application. Thousand Oaks, CA: Sage.
- Nelson, D. L., & Simmons, B. L. (2003). Health psychology and work stress: A more positive approach. In Quick, J. C., & Tetrick, L. E. (Eds.), *Handbook of occupational health psychology*. Washington DC: American Psychological Association.
- Nordic Council of Ministers. (2006). *Nordic statistical yearbook 2006*. Copenhagen: Nordic Council of Ministers.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5–14.
- Snyder, C. R., & Lopez, S. J. (2007). *Positive psychology: The scientific and practical explorations of human strengths*. Thousand Oaks, CA: Sage.
- Svendsen, G. T. (2005). Social capital in Western and Eastern Europe. In Höhmann, H.-H., & Welter, F. (Eds.), *Trust and entrepreneurship: A West-East perspective*. Cheltenham: Edward Elgar.
- Thorsrud, E., & Emery, F.E. (1970). *Mod nye samarbejdsformer – Eksperimenter i industrielt demokrati*. [oversat fra norsk original dateret 1969] Copenhagen: Hasselbalch.
- Turner, N., Barling, J., & Zacharatos, A. (2002). Positive psychology at work. In Snyder & Lopez (Eds.), *Handbook of positive psychology*. Oxford: Oxford University Press.



## 2. Projects

### 2.1 Work Environment and Health in Danish Care for the Elderly

*Vilhelm Borg*, NRCWE, Denmark

#### *2.1.1 Purpose of the study*

The purpose of the study was to investigate the association between resources of the workplace and health, retention, sick leave, and the quality of care in municipal long-term care for the elderly.

#### *2.1.2 Study design and sample*

The study is a longitudinal survey of all employees caring for the elderly in 36 municipalities in Denmark, which together employ 13% of all municipal employees in the long-term care sector in Denmark. The baseline study took place in the period October 2004 – April 2005. Approximately 12,700 employees in the 36 municipalities were invited to participate in the study. Of these, 9949 returned the questionnaire, giving a response rate of 78 %.

The sampling unit of the study was municipalities. Originally, we invited 65 municipalities, forming five clusters in five regions of Denmark, to take part in the survey. Of those invited, 36 municipalities (55%) agreed to participate.

The municipalities were selected to reflect the variation that exists between Danish municipalities in a number of relevant respects, including the size of the long-term care organization, the demographic composition of the population of elderly persons, the socio-economic wealth of the community, its expenditure on long-term care, and local labour market conditions.

Of the 36 municipalities, one was a very large municipality with 17 divisions; in terms of population, each of the divisions was as large as the average municipality of the 35 other municipalities. For most purposes we treated each of the 17 divisions as an independent municipality. Accordingly, the study sample can be seen as comprising 52 municipal areas (35 + 17).

The municipalities had a combined total of 301 organizational units with 10 or more employees. The 9949 respondents were employed in nine job groups (Table 1). The largest group categories were SOSU help-

ers (34%), SOSU assistants (13%), and the groups with formal education, i.e. home helps, nurse aides (nursing assistants) and nursing home assistants (18%).

**Table 1 Participants in the Study 'Work Environment and Health in Danish Care for the Elderly' at a Baseline in 2004–2005, by Job Groups.**

	Frequency	Per cent
Leaders	727	7
Home helps, nurse aides and nursing home assistants	1826	18
SOSU assistants	1286	13
SOSU helpers	3343	34
Untrained care personnel	212	2
Nurses	1014	10
Service personnel	831	8
Activity personnel, therapists	453	5
Administrative personnel	257	3
Total	9949	100

The second phase of data collection took place in Autumn 2006, and the third phase is planned for Autumn 2008. Embedded in this longitudinal study are a number of interventions studies involving some additional data collection.

### 2.1.3 Data collection

The municipalities supplied us with information about all permanently employed workers in the long-term care organizations. We supplemented these data with data from Danmarks Statistik ([www.dst.dk/statistik-banken](http://www.dst.dk/statistik-banken)), which contains information on, among other things, the demography, labour market conditions and social service expenditures of Danish municipalities. With respect to Municipality A, we were supplied with the same data on its divisions by the statistical office of the central administration of the municipality.

Most of the information on the individual level was supplied to us through a questionnaire containing 300 standardized questions. The survey of the employees was conducted between November 2004 and August 2005. Lists of all employees in long-term care organizations were collected from the municipal pay administration and checked for errors by the clerical staff of the respective organizations. In all municipalities except Municipality A, the questionnaires were distributed by members of staff who were contact persons for the survey organization. In Municipality A the questionnaires were distributed by post. All municipalities returned the completed questionnaires by post.

### 2.1.4 Main study variables

The questionnaire included questions on the psychosocial working environment, health, well-being, commitment, quality of care work, intentions to stay or leave the actual workplace or sector, and personal capacities. Many of the questions cover positive factors, which constitute several dimensions. Information about these dimensions, the number of items and the sources of the scales are shown in Table 2.

**Table 2 Dimensions of Positive Factors in the Study 'Work Environment and Health in Danish Care for the Elderly'.**

Main dimension	Dimension	Number of items	Source
Job characteristics	Influence	4 (a)	The Copenhagen Psychosocial Questionnaire (COPSOQ) (Kristensen, Hannerz, Hogh, & Borg, 2005)
	Possibilities for development	4 (b)	COPSOQ
	Predictability	2 (b)	COPSOQ
	Role clarity	4 (b)	COPSOQ
Group characteristics	Cohesion	(c)	(Anderson & West, 1998)
	Autonomy	(c)	(Anderson & West, 1998)
Organizational characteristics	Quality of leadership	4 (b)	COPSOQ
	Social support from leaders	4 (a)	COPSOQ
	Social support from colleagues	4 (a)	COPSOQ
	Transformational leadership	7 (b)	(Carless, Wearing, & Mann, 2000)
	Trust	4 (b)	Self-constructed
	Justice	4 (b)	Self-constructed
Engagement	Involvement in the organization	5 (b)	COPSOQ
	Meaning of work	3 (b)	COPSOQ
Health and well-being	Self-rated health	1 (d)	SF-36 health survey (Bjorner & Kristensen, 1999)
	Well-being	5 (e)	WHO General Well-Being Scale
	Pleasure of work	2 (b)	Self-constructed
Person factors	Self efficacy	7 (f)	Danish Version of the General Self-Efficacy Scale (Bech, Olsen, Kjoller, & Rasmussen, 2003)

Notes: Answering categories for the individual items. a. Always, Often, Sometimes, Seldom, Never/Hardly ever. b. To a very large extent, To a large extent, Somewhat, To a small extent, To a very small extent. c. Strongly agree, Agree, Somewhat agree, Disagree, Strongly disagree. d. Excellent, Very good, Good, Fair, Poor. e. All the time, Most of the time, More than half of the time, Less than the half of the time, A little of the time, none of the time) f. Correct, Somewhat correct, Only slightly correct, Incorrect

### 2.1.5 References

- Anderson, N. R., & West, M. A. (1998). Measuring climate for work group innovation: Development and validation of the team climate inventory. *Journal of Organizational Behavior*, 19, 235–258.
- Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. K. (2003). Measuring well-being rather than the absence of distress symptoms: A comparison of the SF-36 Mental Health subscale and the WHO-Five Well-Being Scale. *International Journal of Methods in Psychiatric Research*, 12, 85–91.
- Bjorner, J. B., & Kristensen, T. S. (1999). Multi-item scales for measuring global self-rated health. *Research on Aging*, 21, 417–439.
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, 14, 389–405.
- Kristensen, T. S., Hannerz, H., Hogh, A., & Borg, V. (2005). The Copenhagen psychosocial questionnaire – A tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health*, 31, 438–449.

## 2.2 Copenhagen Psychosocial Questionnaire

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### 2.2.1 Purpose of the study

The main objectives of the project were 1) to develop and validate a questionnaire to measure several dimensions in the psychosocial work environment and well-being, and 2) to carry out a comprehensive survey of the work environment of Danish employees. This project is based on the former Copenhagen Psychosocial Questionnaire COPSQ-I-Study (Kristensen, Hannerz, Hogh, & Borg, 2005).

### 2.2.2 Study design and sample

In 2004 we send out a questionnaire to a representative sample of people in Denmark aged between 20 and 60 years old. Approximately 8000 people were invited to participate in the study, and of these 4732 returned the questionnaire, giving a response rate of 60%. Of the total sample, 3517 were employed. The distribution by sector of employment is shown in Table 3.

**Table 3 Participants in the Study 'Copenhagen Psychosocial Questionnaire' in 2004 by Employment Sectors (BAR).**

	Frequency	Per cent
0 Outside the BAR distribution	6	0.2
1 BAR Industry	364	10.3
2 BAR Construction	164	4.7
3 BAR Graphic industries	22	0.6
4 BAR Transportation and wholesale	300	8.5
5 BAR Trade	113	3.2
6 BAR Service	289	8.2
7 BAR Agriculture	83	2.4
8 BAR Social and health care	745	21.2
9 BAR Education and research	338	9.6
10 BAR Financial and public administration	278	7.9
11 BAR Private administration	266	7.6
12 Unknown	549	15.6
Total	3517	100

### 2.2.3 Data collection

The survey of the employees was conducted in Autumn 2004 and August 2005. The data were supplied through a questionnaire containing 128 standardized questions covering 41 dimensions. A total of 3153 employees answered the questionnaire by post, and 384 via the Internet.

### 2.2.4 Main study variables

The questionnaire included questions on the *psychosocial working environment, health, well-being, commitment*, and selected *personal factors*. Many of the questions covered positive factors, which constituted several dimensions. Information about these dimensions, the number of items and the sources of the scales are shown in Table 4.

**Table 4 Dimensions of Positive Factors in the Study 'Work Environment and Health in Danish Care for the Elderly'.**

Main dimension	Dimension	Number of items	Source
Job characteristics	Influence	4 (a)	COPSOQ-I (Kristensen et al., 2005)
	Possibilities for development	4 (b)	COPSOQ-I
	Predictability	2 (b)	COPSOQ-I
	Role clarity	4 (b)	COPSOQ-I
Organizational characteristics	Quality of leadership	4 (b)	COPSOQ-I
	Social support from leaders	4 (a)	COPSOQ-I
	Social support from colleagues	4 (a)	COPSOQ-I
	Transformational leadership	7 (b)	(Carless, Wearing, & Mann, 2000)
	Trust	4 (b)	Self-constructed
Engagement	Justice	4 (b)	Self-constructed
	Involvement in the organization	5 (b)	COPSOQ-I
	Meaning of work	3 (b)	COPSOQ-I
Health and well-being	Self-rated health	1 (c)	SF-36 (Bjorner & Kristensen, 1999)
Person factors	Self efficacy	7 (d)	Danish Version of the General Self-Efficacy Scale (Bech, Olsen, Kjoller, & Rasmussen, 2003)

Notes: a. Always, Often, Sometimes, Seldom, Never/Hardly ever. b. To a very large extent, to a large extent, Somewhat, To a small extent, To a very small extent. c. Excellent, Very good, Good, Fair, Poor. d. Correct, Somewhat correct, Only slightly correct, Incorrect

### 2.2.5 References

- Bech, P., Olsen, L. R., Kjoller, M., & Rasmussen, N. K. (2003). Measuring well-being rather than the absence of distress symptoms: A comparison of the SF-36 Mental Health subscale and the WHO-Five Well-Being Scale. *International Journal of Methods in Psychiatric Research*, *12*, 85–91.
- Bjorner, J. B., & Kristensen, T. S. (1999). Multi-item scales for measuring global self-rated health. *Research on Aging*, *21*, 417–439.
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, *14*, 389–405.
- Kristensen, T. S., Hannerz, H., Hogh, A., & Borg, V. (2005). The Copenhagen psychosocial questionnaire – A tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health* *6*, *31*, 438–449.

## 2.3 Identification and well-being – tracking the positives in the work environment in the elderly care sector in Denmark

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### 2.3.1 Purpose of the study

The study's objective is to identify the interplay between personal resources and work environment factors on the evolution of positive work identity and well-being amongst employees in the elderly care sector in Denmark. Further, the analysis will investigate the extent to which positive work identity and well-being have an impact on sick leave and turnover intentions amongst the employees in the Danish elderly care sector. The study is inspired by the conceptual framework provided by the school of positive psychology.

### 2.3.2 Work-life relevance

The elderly care sector in Denmark is increasingly experiencing problems in recruiting the staff required to satisfy current and future needs for elderly care services. A demanding psychosocial work environment can be construed as a significant cause of these problems and, accordingly, a central aim of this project is to identify the causes and consequences of a series of positive factors in the work environment in the sector, in order to improve the recruitment potential of the Danish elderly care sector.

### 2.3.3 Study design and sample

This study draws on the same data as the project 'Work Environment and Health in Danish Care for the Elderly' described in Section 2.2. See Section 2.2 for a description for the study design and sample of the present project. The outcomes will be analysed using multilevel analysis.

### 2.3.4 Main variables

*Outcome variables:* Sickness absence and turnover intentions.

*Intermediate variables:* Work identity (meaning of work and involvement in the organization), well-being (flourishing, pleasure of work, depression, burnout, and sleep quality).

*Explanatory variables:* Individual background factors (gender, age, marital status, and job position), personal resources (self-efficacy), and a series of work environment- and organizational factors at the individual level, the work unit level and the municipal level.

## 2.4 Exploring Optimal Experiences: Facilitation of Work-Related Flow

*Karoline Hofsløtt Kopperud*, Norwegian School of Management

### 2.4.1 Purpose of the study

The study is my Master's thesis in Health, Organizational, and Communication Psychology, submitted in 2005 at NTNU. The main purpose of the study was to explore aspects of work settings that facilitate flow experiences. The study directed special attention towards personality dispositions and work characteristics.

### 2.4.2 Study design and sample

Data were collected from participants employed in seven different organizations. For three organizations, questionnaires were distributed by the researcher and either returned directly after having been completed or placed in a box located at the workplace. For the remaining organizations, questionnaires were sent by e-mail or post, and returned by post. Before answering the questionnaire, the participants were informed that participation was voluntary and that the information given would be treated as confidential. Of 221 distributed questionnaires, 120 were returned, giving a response rate of 54.3%.

The sample includes employees from the following sectors: engineering (13.3%), academic and teaching (8.3%), economics and management or administrative work (33.3%), social workers (35.8%), and students or part time workers (9.2%) (Table 5). Of the participants, 80.8% had had higher education and 62.5% had completed more than three years at university or college. A total of 88.3% reported holding permanent positions. The average age of the respondents was 40.9 years ( $SD = 11.8$ ), and 67 (of the 120) were women.

**Table 5 Participants of the study.**

Employment sector	Frequency	Per cent
Engineers	16	13.3
Academic and teaching	10	8.3
Economics, management, administrative	40	33.3
Social workers	43	35.8
Students, part-time workers	11	9.2
Total	120	100

### 2.4.3 Questionnaire

The questionnaire can be divided into roughly two parts. The first part included measures on perceived demands, control, and social support at the workplace, on personality, and on satisfaction with work, and with life in general. The second part asked the respondents to create a diary of their previous workday and to rate the quality of what affected them and experience connected to these episodes. The episodes were defined and explained by the participants themselves, using the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). It is the latter part of the method that measures the quality of subjective experiences, including flow. Table 6 presents an overview of the instruments used for the study.

**Table 6 Instrument overview for the project Exploring Optimal Experiences: Facilitation of Work-Related Flow**

Main dimension	Dimension	Number of items	Source
Job characteristics	Demands	5	Karasek (1985); Theorell, Michelsen &, Nordemar (1993)
	Control	4	Karasek (1985); Theorell et al. (1993)
	Support	4	Karasek (1985); Theorell et al. (1993)
Personality	Neuroticism	17	Martinsen, Nordvik, & Østbø (2003)
	Extraversion	16	Martinsen et al. (2003)
	Openness	14	Martinsen et al. (2003)
	Agreeableness	10	Martinsen et al. (2003)
	Conscientiousness	15	Martinsen et al. (2003)
Satisfaction with Life Scale		5	Pavot & Diener (1993)
Day Reconstruction Method			Kahneman et al. (2004)
Emotions	Positive emotions	4	Basic Emotion State Test (BEST)Vittersø, Dyrdal & Røysamb (2005)
	Negative emotions	6	Basic Emotion State Test (BEST)Vittersø, Dyrdal & Røysamb (2005)
Experience quality		6	Vittersø (1998)
Flow	Challenge-Skill Ratio	2	Csikszentmihaly & Csikszentmihalyi (1988)

### 2.4.4 Instrument explanation

#### Part One

*Demands.* An index consisting of five items was created to measure perceived demands. The five questions were collected from the ‘Job Content Questionnaire’ (JCQ) (Karasek, 1985), and a short version of the ‘Quality of Employment Survey’ (QES) (Theorell et al., 1991). Responses were

rated on a five-point Likert scale, ranging from 1 (very seldom) to 5 (very often).

*Control.* This index consists of four items on decision authority and use of abilities. The questions were based on the JCQ and the QES. Responses were rated on a five-point Likert scale, ranging from 1 (very seldom) to 5 (very often).

*Support.* This index consists of three items based on the JCQ and the QES. The respondents were asked to assess their relationship with colleagues and superiors. Responses were rated on a five-point Likert scale, ranging from 1 (very seldom) to 5 (very often).

*Personality Measures.* A short version of the Norwegian version of the Revised NEO Personality Inventory (NEO PI-R) (Martinsen, Nordvik & Østbø, 2003) was developed to measure personality. It measures the five factors and all 36 facets mainly by two items per facet. The items are ranged on a five-point Likert scale, from 'strongly disagree' (1) to 'strongly agree' (5). Due to theoretical aspects and evaluations, some facets were measured by all eight items and others were not. Depression (N) and Positive Emotions (E) were measured by all eight items defined by NEO PI-R. The facets Self-Consciousness (N), Fantasy (O), Aesthetics (O), Feelings (O), and Ideas (O), and all facets on the Conscientiousness factor were measured by three items instead of two items.

Selection of the facets was based on the item's correlation with the facet it represents. Items with the highest correlations (drawn from the results of Martinsen et al., 2003) were selected, in order to give a satisfactory measure of the facet.

*Satisfaction with Life Scale.* A five-item scale developed by Pavot and Diener (1993) to assess satisfaction with life. The items were graded on a seven-point Likert scale, ranging from 'strongly disagree' (1) to 'strongly agree' (7) ( $\alpha = .86$ ).

In addition, respondents were asked to answer questions about *demographic variables*: gender, year of birth, education, type of employment, and years of employment in their current job.

## Part Two

*Day Reconstruction Method (DRM).* The method was presented to the participants in the last section of the questionnaire, in an identical form to that of Kahneman et al. (2004), though translated into Norwegian. Instead of creating predefined categories of what was being done and with whom they were with, the respondents were asked to define these categories. A field was left open in the lower right corner of the diary for the researcher to record categories. The advantage of not having predefined categories is more freedom for the respondents to give more exact answers. Based on the category ideas of Kahneman et al. (2004), this resulted in creation of a 'with' category and a 'what' category (Table 7).

**Table 7 Categories of Activity Type and with Whom the Activity Typically was Done.**

'With'	Co-workers/supervisor Clients/customers/users Alone Unspecified
'What'	Commuting Maintenance work Core work Break Leisure

The commuting category (Table 7) implies any type of travelling to or from work. Maintenance work was defined as activities not directly related to work, such as tidying the office or checking e-mails. Core work relates to activities which could be directly associated with the work type. For example, a social worker would engage in core work when dealing with a difficult teenager. For an engineer, a core work situation can be exemplified as meeting with entrepreneurs to plan for concurrent engineering. In all, the respondents could report up to five episodes.

*Emotions.* In order to measure emotions during the different episodes (state emotions), a revised version of the Basic Emotion State Test (BEST) (Vittersø, Dyrdal, & Røysamb, 2005) was included. This version consisted of ten items assumed to represent both positive and negative emotions. The items were rated on a scale, ranging from 0 (not felt at all) to 6 (strongly felt). Four positive emotions and six negative emotions were collapsed into a positive emotions sum score variable and a negative emotion sum score variable. Additionally, a variable representing the balance between positive and negative emotions was generated by subtracting the sum scores of negative emotions from the sum scores of positive emotions.

*Flow Simplex.* The flow simplex measure was made up of six bipolar adjective scales that characterize affects connected to assimilation resistance (including the flow state). Between the binary adjectives lies a seven-point scale which the respondents used to indicate which adjective pair their feelings most resembled. The adjectives were easy-difficult, pleasant-unpleasant, interesting-uninteresting, challenging-tame, chaotic-harmonic, and frustrating-not frustrating.

*Challenge-Skill-Ratio (CSR).* As a measure of challenges was included in the flow simplex, only one item measuring abilities was included to account for the remainder of the CSR. This part asks the respondents to assess their ability to address the specific situation on a scale from 1 to 6, where '1' indicates not good enough abilities, and '6' indicates very good abilities. The four CSR categories were created based on the interactions between skill levels and challenges. The CSR category 'apathy' includes below-average scores on both challenges and skills. Below-average scores on challenges combined with above-average scores on skills fall into the 'relaxation' category. The 'flow' category comprises above-average scores on challenges combined with above-average scores

on skills. The ‘anxiety’ category comprises above-average scores on challenges and below-average scores on skills.

#### 2.4.5 References

- Csikszentmihalyi, M. & Csikszentmihalyi, I. S. (1988). *Optimal Experience: Psychological Studies of Flow in Consciousness*. New York: Cambridge University Press.
- Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. (2004). A survey method for characterizing daily life experience: The Day Reconstruction Method. *Science*, 305(5702), 1776–1780.
- Karasek, R. (1985). *Job content questionnaire and user's guide*. Lowell: University of Massachusetts Lowell, Department of Work Environment.
- Martinsen, Ø., Nordvik, H., & Østbø, L. E. (2003). Norsk utgave av Revised NEO Personality Inventory (NEO PI-R). Oslo: Gyldendal.
- Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5, 164–172.
- Theorell, T., Michelsen, H., Nordemar, R. (1993). Music 1 studygroup. Validitetsprøving av psykososiale indreksbildninger (Validity testing of psychosocial indices). In M. Hageberg & C. Hogstedt, *Stockholmsundersökningen 1*. pp.163–177. Stockholm, Music Books.
- Vittersø, J. (1998). Happy people and wonderful experiences: Structure and predictors of subjective well-being. Doctoral dissertation, University of Oslo.
- Vittersø, J., Dyrdal, G. M., & Røysamb, E. (2005, June). Utilities and capabilities: A psychological account of the two concepts and their relation to the idea of a good life, Paper presented at the 2nd Workshop on Capabilities and Happiness, Milan, Italy.

## 2.5 Positive factors at work in two Norwegian municipalities

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### 2.5.1 Purpose of the study

The study aimed to investigate the association between different positive factors at work concerning job satisfaction and long-term health in Norwegian municipal employees.

### 2.5.2 Study design and sample

The survey was carried out in the autumn of 2005 in two municipalities in mid-Norway, and included a total of 265 employees. The employees were working in different sectors of the municipality, including kindergartens, schools, administration, social welfare, children's welfare, economy, agriculture, family care, culture, personnel, service, health care, and care of the elderly. All employees in the selected services in the two municipalities were asked to participate in the survey. The response rate was 42 %.

The total sample consisted of 79% women and 21% men, and 60% of them worked full time and 40% part time. In all, 33% of the respondents were aged 50 years or over and 52% held at least a college or university degree. The distribution of the employees' self-perceived general health revealed that 38% thought they had excellent health, 46% normal health, and 16% ill-health.

### *2.5.3 Data collection*

Several municipalities in mid-Norway were contacted via their respective personnel managers and invited to participate in the study. Two of the municipalities agreed participate in the study. In one of the municipalities the personnel manager asked every section whether they wanted to participate or not, and 8 out of 23 sections agreed. In the other municipality the personnel manager decided which sections were to participate, and chose 11 of 26 sections.

The data were collected during October 2005, and one reminder was sent. A total of 633 questionnaires were distributed and 265 were returned. The two municipalities were combined as one sample because many similarities were found between them: they were in the same region, they had the same type of departments, and they were administered in much the same way. The first municipality had a response rate of 68%, with 131 out of 193 completing the questionnaires. The second municipality had a response rate of 33%, with 131 out of 406 completing the questionnaires. As a total sample, the response rate was 41.9%.

### *2.5.4 Content of questionnaire*

A questionnaire was developed on the basis of traditional job-characteristics measures and validated measures taken from the field of positive psychology. The measures were aimed at investigating whether traditional as well positive factors in working life were related to job satisfaction and health. The included dimensions are listed in Table 8.

**Table 8 Dimensions of the Factors in the Study 'Positive Factors at Work in Two Norwegian Municipalities'.**

Main dimension	Dimension	Number of items	Source
Personal characteristics	Curiosity	5	(Amabile, Hill, Hennessey, & Tighe, 1994)
	Flow	3	(Kashdan, Rose, & Fincham, 2004)
	Complexity	5	(IPIP, 2002)
	Competence	5	(IPIP, 2002)
Job characteristics	Job demands	5	'The job content questionnaire' (JCQ) (Karasek, 1985) and a short-version of 'The quality of employment survey' (QES) (Theorell et al., 1993)
	Perceived control	4	JCQ (Karasek, 1985) and a short-version of QES (Theorell et al., 1993)
	Social support	3	JCQ (Karasek, 1985) and a short-version of QES (Theorell et al., 1993)
Inspiration	Frequency	4	(Thrash & Elliott, 2003)
	Intensity	4	(Thrash & Elliott, 2003)
Control	Positive challenges at work	3	General Questionnaire for Psychological and Social factors at work (QPS Nordic) (Dallner, et al., 2000)
	Control over decisions	5	QPS Nordic
	Control over work pacing	4	QPS Nordic
Mastery of work	Perception of mastery	4	QPS Nordic
Self-efficacy	Self-efficacy	10	(Schwartzler, 1993)
Work motives	Intrinsic motivation to work	3	QPS Nordic
	Extrinsic motivation to work	3	QPS Nordic
Communication	Communication with leadership	9	(Christensen & Størseth, submitted)
	Communication with co-workers	4	(Christensen & Størseth, submitted)
	Disruptive relations	5	(Christensen & Størseth, submitted)
Optimism	Optimism	6	(Scheier, Carver, & Bridges, 1994)
	Pessimism	4	(Scheier et al., 1994)
Information	Message clarity	4	(Christensen & Størseth, submitted)
	Quantity and timing of the message	3	(Christensen & Størseth, submitted)
Influence	Perceived influence	3	(Christensen & Størseth, submitted)
	Perceived union assistance	2	(Christensen & Størseth, submitted)
Emotions	Positive emotions	6	BEST Vittersø, Dyrdal & Røysamb (2005)
	Negative emotions	9	BEST Vittersø, Dyrdal & Røysamb (2005)
Job satisfaction	Job satisfaction	22	Occupational Stress indicator (OSI) (Cooper, Sloan, & Williams, 1987)
Life satisfaction	Life satisfaction	5	(Pavot & Diener, 1993)
Health	General health	1	(Aronsson & Lindh, 2004)
	Sick presence	1	(Aronsson & Lindh, 2004)
	Sick absence	1	(Aronsson & Lindh, 2004)
	Long-term health	2	(Aronsson & Lindh, 2004)

### 2.5.5 References

- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientation. *Journal of Personality and Social Psychology*, *66*, 950–967.
- Aronsson, G., & Lindh, T. (2004). Långtidsfriskas arbetsvillkor – En populationsstudie. *Arbete och Hälsa*, *10*, 1–21. Stockholm: Arbetslivsinstitutet.
- Christensen, M., & Størseth, F. Communication as strategic change management. Manuscript submitted for publication.
- Cooper, C.L., Sloan, S., & Williams, S. (1987). Occupational Stress Indicator. Windsor: NFER/Nelson.
- Dallner, M., Elo, A. L., Gamberale, F., Hottinen, V., Knardahl, S., Lindström, K., Skogstad, A., & Ørhede, E. (2000). *Validation of the General Nordic Questionnaire (QPS Nordic) for psychological and social factors at work*. Copenhagen: Nord 2000: 12.
- IPIP. (2002). *International Personality Item Pool. A scientific collaboration for the development of advanced measurement of personality traits and other individual differences*. Retrieved, from <http://ipip.ori.org/>.
- Kashdan, T. B., Rose, P., & Fincham, F. D. (2004). Curiosity and exploration: Facilitating positive subjective experiences and personal growth opportunities. *Journal of Personality Assessment*, *82*, 291–305.
- Karasek, R. (1985). *Job Content Questionnaire and user's guide*. Lowell: University of Massachusetts Lowell, Department of Work Environment.
- Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, *5*, 164–172.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*, 1063–1078.
- Schwartz, R. (1993). Measurement of perceived self-efficacy: Psychometric scales for cross-cultural research. Berlin: Freie Universität Berlin, Institut für Psychologie.
- Theorell, T., Michelsen, H., Nordemar, R. (1993). Music 1 studygroup. Validitetsprøving av psykososiale indexbildningar (Validity testing of psychosocial indices). In M. Hageberg & C. Hogstedt, *Stockholmsundersökningen 1*. pp.163–177. Stockholm, Music Books.
- Thrash, T. M., & Elliot, A. J. (2003). Inspiration as a psychological construct. *Journal of Personality and Social Psychology*, *84*, 871–889.
- Vittersø, J., Dyrdal, G. M., & Røysamb, E. (2005, June). Utilities and capabilities: A psychological account of the two concepts and their relation to the idea of a good life, Paper presented at the 2nd Workshop on Capabilities and Happiness, Milan, Italy.

### 2.5.6 Publications on the data

- Christensen, M. (2007). *Is positive health more than the absence of illness? A study of job characteristics, optimism, positive and negative emotions*. Oral presentation at the XIIIth European Congress of Work and Organisational Psychology in Stockholm, 9–12 May 2007.
- Christensen, M. (2006). Positiv psykologi i arbeidslivet. Invited speaker at the conference of 'Helsefremmende arbeid' the 7<sup>th</sup> and 8<sup>th</sup> of November at Lillestrøm.
- Christensen, M. (2006). Is positive health more than the absence of illness? A study of job characteristics, optimism, positive and negative emotions. Oral presentation at the the 8th Conference on Social and Community Psychology the 9th and 10th of November 2006 in Trondheim.
- Christensen, M., & Idstad, M. (2006). Positive forhold i arbeidslivet: en undersøkelse i midtnorske kommuner (Positive factors at work: a study of Norwegian municipalities). Informasjonsrapport til respondentene.

## 2.6 Positive factors at work: An industrial organization, a military organization and service institutions in Norway

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### 2.6.1 Purpose of the study

The study aimed to investigate the association between different positive factors concerning job satisfaction and long-term health in the Norwegian military, industry and private service organizations.

### 2.6.2 Study design and sample

The cross-sectional study was based on a correlational design and carried out in seven different organizations in the county of Sør-Trøndelag. The study included one industrial organization, one military organization and five private service institutions. Together, the seven organizations comprised 630 employees, and of these 325 returned their completed questionnaire, giving a response rate of 52%. Of the respondents, 26% were women and 74% were men, and their average age was 38 years (Table 9).

**Table 9 Participants in the Study.**

		Frequency	Per cent
Valid	Service organizations	97	30.5
	Industry organization	52	16.4
	Military organization	169	53.1
	Subtotal	318	100
Missing occupation		7	
Total		325	

### 2.6.3 Data collection

The data collection took place in October 2006. The organizations were selected from a list of the largest organizations in Sør-Trøndelag, Norway. The seven organizations were first contacted by e-mail and thereafter followed up by telephone contact. Information was given through information meetings with the leader groups and passed on to the employees, and in addition, information was given in the questionnaire at an individual level. The questionnaires were delivered to the organizations and subsequently the completed questionnaires were collected by a student group from the Norwegian University of Science and Technology (NTNU), Trondheim.

### 2.6.4 Content of questionnaire

The questionnaire was developed based on elements from psychosocial work environmental research, including several elements from positive psychology. The included dimensions are listed in Table 10.

**Table 10 Dimensions of the Study 'Positive Factors at Work: An Industrial Organization, a Military Organization and Service Institutions in Norway'.**

Main dimension	Dimension	Number of items	Source
Optimism	Optimism	6	(Scheier, Carver, & Bridges, 1994)
	Pessimism	4	(Scheier et al., 1994)
Self-efficacy	Self-efficacy	10	(Schwartzler, 1993)
Job characteristics	Job demands	5	'The job content questionnaire' (JCQ) (Karasek, 1985) and a short-version of 'The quality of employment survey' (QES) (Theorell et al., 1993)
	Perceived control	4	JCQ (Karasek, 1985) and a short-version of QES (Theorell et al., 1993)
	Social support	3	JCQ (Karasek, 1985) and a short-version of QES (Theorell et al., 1993)
Emotions	Positive emotions	6	BEST Vittersø, Dyrdal & Røysamb (2005)
	Negative emotions	9	BEST Vittersø, Dyrdal & Røysamb (2005)
Influence	Perceived influence	3	(Christensen & Størseth, submitted)
	Perceived union assistance	2	(Christensen & Størseth, submitted)
Personal characteristics	Flow	3	(Kashdan, Rose, & Fincham, 2004)
Life satisfaction	Life satisfaction	5	(Pavot & Diener, 1993)
Job satisfaction	Job satisfaction	22	OSI (Cooper, Sloan, & Williams, 1987)
Health	General health	1	(Aronsson & Lindh, 2004)
	Sick presence	1	(Aronsson & Lindh, 2004)
	Sick absence	1	(Aronsson & Lindh, 2004)
	Long-term health	2	(Aronsson & Lindh, 2004)
Health symptoms	Musculoskeletal – physical symptoms	8	(Eriksen, Ihlebæk, & Ursin, 1999)
	Pseudoneurology – mental symptoms	7	(Eriksen et al., 1999)

### 2.6.5 References

- Aronsson, G., & Lindh, T. (2004). Långtidsfriskas arbetsvilkor – En populationsstudie. *Arbeteoch Hälsa*, 10, 1-21. Stockholm: Arbetslivsinstitutet.
- Christensen, M., & Størseth, F. Communication as strategic change management. Manuscript submitted for publication.
- Cooper, C. L., Sloan, S., & Williams, S. (1987). Occupational Stress Indicator. Windsor: NFER/Nelson.
- Eriksen, H. R., Ihlebæk, C., & Ursin, H. (1999). A scoring system for subject-

- tive health complaints (SHC). *Scandinavian Journal of Public Health*, 1, 63–72.
- Karasek, R. (1985). *Job Content Questionnaire and user's guide*. Lowell: University of Massachusetts Lowell, Department of Work Environment.
- Kashdan, T. B., Rose, P., & Fincham, F. D. (2004). Curiosity and exploration: Facilitating positive subjective experiences and personal growth opportunities. *Journal of Personality Assessment*, 82, 291–305.
- Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, 5, 164–172.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078.
- Schwartz, R. (1993). *Measurement of perceived self-efficacy: Psychometric scales for cross-cultural research*. Berlin: Freie Universität Berlin, Institut für Psychologie.
- Theorell, T., Michelsen, H., Nordemar, R. (1993). Music 1 studygroup. Validitetsprövning av psykososiala indexbildningar (Validity testing of psychosocial indices). In M. Hageberg & C. Hogstedt, *Stockholmsundersökningen 1*. pp.163–177. Stockholm, Music Books.
- Vittersø, J., Dyrdal, G. M., & Røysamb, E. (2005, June). Utilities and capabilities: A psychological account of the two concepts and their relation to the idea of a good life, Paper presented at the 2nd Workshop on Capabilities and Happiness, Milan, Italy.

### 2.6.6 Publications on data

- Christensen, M., & Berthelsen, M. (2007). Always look on the bright side of life? A study of optimism, positive emotions, job design and long-term health. Oral presentation at the 1st Conference in Applied Positive Psychology. 18–20 April 2007 University of Warwick, England.

## 2.7 Flow as a Resource: A Contribution to Organizational Psychology

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### 2.7.1 Purpose of the study

The study is my Master's thesis in psychology, submitted June 2004 at the Department of Psychology, NTNU. The objective of the thesis was to investigate whether and how the state of psychological flow operates in work settings. The working hypothesis of the project was that flow may function as a potential resource that employees could use to increase work motivation, job satisfaction and work performance. Based on this assumption, there were two main aims. The first aim was to develop a theory of goal setting and flow that is functional in organizational psychological research. The second aim was to empirically test the flow theory in relation to goal setting, work motivation, work performance, and job satisfaction. A theoretical foundation of flow was established before testing the model empirically.

### 2.7.2 Sample

Data were collected through a self-completion questionnaire survey. The sample consisted of 170 employees at nine different organizations in Norway: 78 were women and 91 were men; 1 participant did not specify their gender. The average age of the group was 38 years ( $SD = 9.0$ ), 54% had had university education, and 96% worked full time. Of the 400 questionnaires distributed, 170 were returned, giving a response rate of 42, 5 %.

### 2.7.3 Questionnaire

The questionnaire consisted of two parts: a general part with standardized measures, and the part specifically tapping different situations at work (Table 11). Personal demographic variables included year of birth, gender, marital status, and education. Work characteristics included present work situation, number of years engaged in the occupation, tenure in the present position, work hours during a week, and overtime hours during a week.

**Table 11 Dimensions of Factors in 'Flow as a Resource: A Contribution to Organizational Psychology'.**

Main Factor	Dimensions	Items	Source
<b>General part</b>			
Flow State Scale*	1. Challenge-skill balance 2. Clear goals 3. Control 4. Feedback 5. Merging of self and activity 6. Concentration 7. Loss of self-consciousness 8. Alteration of time 9. Autotelic experience	36	Jackson and Marsh (1996); Revised and validated version Straume (2004)
Work motivation	1	4	Lawler and Hall (1970)
Job satisfaction	1	3	Hackman and Oldman (1975)
Work performance*	1	1	Straume (2004)
Goal setting	1. Personal goal-setting 2. Organizational goals	9	Locke and Latham (1990); Re- vised short-version by Straume (2004)
<b>Specific part</b>			
Flow Simplex Structure*	6 bipolar adjectives	6	Vittersø (2004)
Specific situations at work*	1. Being totally absorbed and engaged in a task 2. Being very short on time to finish a task 3. Having plenty of time to finish a task 4. Not succeeding in reaching a set goal	4	Straume (2004); Vittersø (1998).
Specific situational measures*	Flow simplex, work motiva- tion, work performance, and job satisfaction	4	Vittersø (2004); Straume (2004)

\* indicates corresponding section in the text

#### 2.7.4 General part of the questionnaire

*Flow State Scale.*\* A nine-dimensional scale consisting of 36 items was used to measure level and intensity of the flow experience in general. Flow was assessed on a 5-point Likert-type scale, ranging from 'strongly disagree' to 'strongly agree'. The scale was originally developed and validated by Jackson and Marsh (1996) to measure flow in sport and physical activity settings. However, in order to fit the scale to work settings, some of the items had to be revised. Respondents were asked to recall a specific flow situation at work and record this prior to answering the questionnaire.

*Work performance.*\* Respondents gave a subjective appraisal of perceived work performance. The evaluation scale was a five-point Likert-type scale, ranging from 'very poorly' to 'very good'. Prior to carrying out this rating the subjects were asked to record the five most important work tasks that characterized their job, in order for the appraisal to be more accurate.

#### 2.7.5 Specific part of questionnaire

*Flow simplex structure.*\* The flow simplex structure developed by Vittersø (1998) was used to assess flow in specific situations. The flow simplex measurement is made up of seven adjectives that characterize the flow state. The adjectives are presented on a bipolar semantic differential scale, and subjects responded to a seven-point scale listed between the binary adjectives. The flow adjectives are easy-difficult, pleasant-unpleasant, joyful-sad, fun-boring, interesting-uninteresting, challenging-tame, and dramatic-undramatic. This measure is used to analyse flow in specific situations. The flow simplex is presented in detail in Vittersø (2004).

Four specific situations were assessed using the flow simplex structure: (1) being totally absorbed and engaged in a task; (2) being very short on time to finish a task; (3) having plenty of time to finish a task; and (4) not succeeding in reaching a set goal. Respondents were asked to recall an instance of a given situation and record it in the area provided on the form. After responding to the flow simplex structure following the given specific situation, four items measuring work performance, work motivation and job satisfaction followed.

#### 2.7.6 Results

Based on the theoretical evaluation and empirical analyses, the results indicate that goal setting can be a predictor of flow experiences at work. At work, flow is experienced as fun and interesting, which differs slightly from other studies which have found flow to be characterized as challenging. The effects of being in flow can be attributed to increased work mo-

tivation, work performance, and job satisfaction. Implications regarding measurements of flow are discussed, and suggestions regarding future research and applicability of the flow model are made.

#### *2.7.7 PhD project – Positive psychology and optimal human functioning*

The current research project constitutes the subject my PhD degree. The working title of the survey is ‘Positive factors at work’. Especially, there is a focus on optimal experiences, such as flow and engagement, and how these factors contribute to occupational health. The project draws on an important theoretical distinction between two different approaches to well-being, namely hedonic and eudaimonic well-being (Straume, 2005).

#### *2.7.8 Sample*

Data have been collected among members of the occupational health services in Norway (N = 450). The sample is cross-sectional within health services, and subjects had a mean age of 48 years (SD = 10). A total of 65% were females and 25% were males. All survey variables include what are defined as positive factors and that are assumed to be especially important in work settings.

#### *2.7.9 Questionnaire*

The questionnaire consisted of two parts. The first part included general measures of positive factors, including personal growth, engagement, life and job satisfaction, self-efficacy, and occupational health. The second part included a section with the Day Reconstruction Method developed by Kahneman, Krueger, Schkade, Schwarz, and Stone (2004) followed by measures on flow (Vittersø, 2004; Straume, 2004) and positive emotions (Vittersø, Dyrdal, and Røysamb, 2005). Data were also collected on both individual and team levels, which makes it possible to conduct multilevel analyses.

**Table 12 Dimensions in the PhD Project 'Positive Factors at Work'.**

Main Factor	Dimensions	Items	Source
<b>General part</b>			
Personal growth	1. Curiosity	5	Amabile, Hill, Hennessey, & Tighe (1994)
	2. Flow	3	Kashdan, Rose & Fincham (2004)
	3. Complexity	5	IPIP (2002)
	4. Competence	5	IPIP (2002)
	5. Learning	5	Vittersø, (1998)
Self-efficacy	1	10	Schwartz (1993)
Goal orientation*	1. Learning oriented	1	Dweck, Chiu, & Hong, (1995)
	2. Performance oriented		
	2. Sick presence	1	Aronsson & Lindh (2004)
	3. Sick absence	1	Aronsson & Lindh (2004)
Job characteristics	1. Job demands	5	'The job content questionnaire' (JCQ) (Karasek, 1985) and a short-version of 'The quality of employment survey' (QES) (Theorell et al., 1993)
	2. Perceived control	4	JCQ (Karasek, 1985) and a short-version of the QES (Theorell et al., 1993)
	3. Social support	3	(JCQ (Karasek, 1985) and a short-version of the QES (Theorell et al., 1993)
Health	1.General health	1	Aronsson & Lindh (2004)
Life satisfaction	1	5	Pavot & Diener (1993)
Job satisfaction	1	3	Hackman and Oldman (1975)
Work Motivation	1	4	Lawler and Hall (1970)
Cross-sectional team-check*	12	60	Available from Human Factors AS (Ekelund, Bjørn - unpublished)
<b>Specific part</b>			
Day Reconstruction Method*	Four episodes	4	Kahneman, Krueger, Schkade, Schwarz, and Stone (2004)
Specific situational measures*	1. Flow simplex	4	Vittersø (2004) and Straume (2004)
	2. Challenge Skill Ratio		Csikszentmihalyi, & Larson (1987)
	3. Positive/negative emotions		BEST. Vittersø, Dyrdal, & Røysamb (2005).

\* indicates corresponding section in the text

### 2.7.10 General part of questionnaire

*Goal orientation.*\* The tendency to define performance goals versus learning goals has proven to influence both well-being, life satisfaction, learning ability, and learning results. Those who prefer performance goals are often focused on results, and are concerned about what other people may think of how well they do. The learning oriented are more preoccupied with learning new things, creating challenges and are driven by engagement and curiosity rather than the expectancy of any future reinforcement (Dweck, Chiu, & Hong, 1995; Dweck, 2000).

*Performance versus learning goals:* This measurement was developed by Dweck et al. (1995). In this study the respondents were asked to grade what they thought was the most important of the following:

- 1. To perform well in the eyes of others
- 2. To learn something new

The responses to the question were used to divide the sample into two groups, where the former constituted the performance oriented and the latter the learning oriented.

*Cross-sectional team performance/Tverrfaglig samarbeidssjekk (TSS).* \* TSS was originally developed by Bjørn Ekelund (Human Factors AS, Norway) as a tool for assessing cross-sectional teams in coaching processes. In the present study, TSS was used as a standard questionnaire measurement. The aim was to validate a team measure that fits the criteria of validity and reliability for statistical analyses, and that was originally based on the practical knowledge of Human Factors AS rather than pure psychological theory. The 12 dimensions are: goal, leadership, leader responsibility, roles, the structure of meetings, communication, decision making, acceptance of diversity, learning, trust, conflict management, and collective identity. The responses are graded on a five-point Likert scale, ranging from 1 (totally agree) to 5 (totally disagree). The results were divided into two profiles: one based on individual responses, the other based on the mean of the team.

#### 2.7.11 Specific part of questionnaire

*Day Reconstruction Method.\** The Day Reconstruction Method (DRM) was developed by Kahneman, Krueger, Schkade, Schwarz and Stone (2004). The DRM makes it possible to gather experiential data much which are closer in time than normal scales. Respondents are asked to reconstruct the previous day's workday by keeping a short diary on specific situations divided into different episodes. For the present dataset, respondents were asked to reconstruct four episodes from the previous day. All episodes were given a name, time of beginning and end, a description of what the respondents were doing, and whom they were with. Under each episode followed measures of the flow simplex (Vittersø, 2004), the Challenge-Skill Ratio (Csikszentmihalyi and Larson, 1987), and Basic Emotion State Test (BEST) (Vittersø, Dyrdal and Røysamb, 2005).

Research has proven this method to be highly sensitive in capturing complex variations of cognitive and emotional reactions to work activities. The episodes will provide a detailed picture of how employees experience their work tasks, both when working alone and when working together with colleagues or customers. Before analysing the data, the

episodes are coded into categories of core work versus routine work, and working alone versus working with others.

### 2.7.12 References

- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientation. *Journal of Personality and Social Psychology*, *66*, 950–967.
- Aronsson, G., & Lindh, T. (2004). Långtidsfriskas arbetsvillkor – En populationsstudie. *Arbeteoch Hälsa*, *10*, 1–21. Stockholm: Arbetslivsinstitutet.
- Csikszentmihalyi, M., & Larson, R. (1987). Validity and reliability of the Experiencing Sampling Method. *The Journal of Nervous and Mental Disease*, *175*(9), 526–36.
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgements and reactions: A world from two perspectives. *Psychological Inquiry*, *6*, 267–285.
- Dweck, C. (2000). *Self-Theories: Their role in motivation, personality, and development*. Sussex: Psychology Press.
- Hackman, J. R. and Oldman, G. R. (1975). General job satisfaction scale. In Cook, J. D., Hepworthe, S. J., Wall, T. D., & Warr, P. B. (1981). (Eds.), *The experience of work: A compendium and review of 249 measures and their use* (pp. 12–36) London: Academic Press.
- IPIP. (2002). *International Personality Item Pool. A scientific collaboration for the development of advanced measurement of personality traits and other individual differences*. Retrieved at <http://ipip.ori.org/>.
- Jackson, S. A., & Marsh, H. W. (1996). Development and validation of a scale to measure optimal experience: The flow state scale. *Journal of Sport and Exercise Psychology*, *18*, 17–35.
- Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. (2004). A survey method for characterizing daily life experience: The Day Reconstruction Method. *Science*, *305*(5702), 1776–1780.
- Karasek, R. (1985). *Job content questionnaire and user's guide*. Lowell: University of Massachusetts Lowell, Department of Work Environment.
- Kashdan, T. B., Rose, P., & Fincham, F. D. (2004). Curiosity and exploration: Facilitating positive subjective experiences and personal growth opportunities. *Journal of Personality Assessment*, *82*, 291–305.
- Lawler, E. E., & Hall, D. T. (1970). Internal work motivation scale. In Cook, J. D., Hepworthe, S. J., Wall, T. D., & Warr, P. B. (1981). *The experience of work: A compendium and review of 249 measures and their use*. London: Academic Press.
- Locke, E. A. & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice Hall.
- Pavot, W., & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, *5*, 164–172.
- Schwartz, R. (1993). Measurement of perceived self-efficacy: Psychometric scales for cross-cultural research. Berlin: Freie Universität Berlin, Institut für Psychologie.
- Straume, L. V. (2004). *Flow as a resource: A Contribution to organizational psychology*. Hovedfagsoppgave i Psykologi. Trondheim: NTNU.
- Theorell, T., Michelsen, H., Nordemar, R. (1993). Music 1 studygroup. Validitetsprövning av psykososiala indexbildningar (Validity testing of psychosocial indices). In M. Hageberg & C. Hogstedt, *Stockholmsundersökningen 1*. pp.163–177. Stockholm, Music Books.
- Vittersø, J., Dyrdal, G. M., & Røysamb, E. (2005, June). Utilities and capabilities: A psychological account of the two concepts and their relation to the idea of a good life, Paper presented at the 2nd Workshop on Capabilities and Happiness, Milan, Italy.
- Vittersø, J. (2004). Subjective well-being versus self-actualization: Using the flow-simplex to promote a conceptual clarification of subjective

quality of life. *Social Indicators Research*, 65, 299–331.

Vittersø, J. (1998). Happy people and wonderful experiences: Structure and

predictors of subjective well-being. Doctoral dissertation, University of Oslo.

### 2.7.13 Publications on data

Straume, L. V. & Vittersø, J. (2007). Hedonic and Eudaimonic Experiences: Well-Being Across Work Situations. Paper presented at the IXXXth European Congress on Work and Organizational Psychology, Stockholm, May 9–12.

Straume, L. V. & Vittersø, J. (2007). *Positive Psychology and Occupational Health: The Role of Life Satisfaction and Personal Growth*. Paper presented at the 1<sup>st</sup> Applied Positive Psychology Conference, Warwick University UK.

Straume, L. V. (2007). *Flyt - optimalt engasjement*. Invited speaker for the Occupational Health Services Conference "Arbeidsglede som verdiskapning". March 7th, Trondheim.

Straume, L. V. (2006). *Positiv Psykologi i Arbeidslivet*. Invited speaker at the conference on "Helsefremmende arbeid". November 7–8th, Lillestrøm.

Straume, L. V. & Vittersø, J. (2005). *A Personality Approach to Happiness and Development: Emotional Responses to Success and Failure*. Paper

presented at the 2nd Workshop on Capabilities and Happiness, University of Milano – Bicocca, Italy, 16–18 June, 2005.

Straume, L. V. (2005). Building a practically useful theory on flow in organizational psychology. In Rønning, B. (Ed.), *Flyt: En nøkkel til kreativitet og innovasjon* (pp. 123–153). Trondheim: Tapir Akademiske Forlag.

Straume, L. V. & Christensen, B. (2005). Flyt og positiv psykologi. In Rønning, B. (Ed.), *Flyt: En nøkkel til kreativitet og innovasjon* (pp. 101–120). Trondheim: Tapir Akademiske Forlag.

Straume, L. V. (2004). *Flow as a Resource: A Contribution to Organizational Psychology*. Oral presentation at the 6th Conference on Social and Community Psychology, NTNU, Norway.

Straume, L. V. (2004). *Flow as a resource: A contribution to organizational psychology*. Hovedfagsoppgave i Psykologi. Trondheim: NTNU.

## 2.8 Work-related well-being among Finnish dentists – a prospective follow-up study

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### 2.8.1 Purpose of the study

This study is an on going longitudinal research project focusing on the psychosocial working conditions, work-family interface, changes in dental work, work engagement and burnout, general and family well-being, and health in dentistry.

### 2.8.2 Study design and sample

So far, two study phases have been carried out in this ongoing study among Finnish dentists (Hakanen, 2004b; Hakanen, Bakker, and Demerouti, 2005; Hakanen & Perhoniemi, 2006). In 2003, a questionnaire sur-

vey was sent to every dentist who was a member of the Finnish Dental Association (FDA) ( $n = 4588$ ). Approximately 98% of dentists employed in clinical work in Finland belonged to the FDA (FDA 2005). In total, 3255 (71%) dentists responded to the questionnaire at the baseline (T1), and 2555 of those identified (84%) participated in the follow-up three years later, in 2006 (T2). Of the follow-up respondents, 62% were employed in the public sector, while 38% worked in private sector; 73.5% were women and 26.5% were men.

In 2003, the respondents represented all Finnish dentists in terms of age and gender (Hakanen et al. 2005). The participants in the follow-up study accounted for 57% of the whole profession in Finland. The respondents at T1 and at T2 did not differ from the non-respondents at T2 with respect to the level of work engagement, burnout or symptoms of depression. The third phase of the studied is planned to take place at the beginning of 2009.

### 2.8.3 *Main variables*

The questionnaire is comprehensive, covering many positive (as well as negative) aspects of work, e.g., several scales on general as well as dentist-specific *job resources* (appreciation of the profession, direct and long-term results, professional skills, peer contacts, entrepreneurship, material rewards, positive patient contacts, job control), *emotional work* (Frankfurt Emotion Work Scales: displaying positive emotions and showing sympathy and sensitivity), *positive spillover from work to home and from home to work*, *work engagement* (measured with UWES), *in-role and extra-role performance*, home resources, marital, parental and life satisfaction, health status and work ability, *long-term health*, intrinsic and extrinsic work motives, and *planned and preferred age for retirement* and intention to take early retirement.

**Table 13 Dimensions of Positive Factors in the Study 'Work-Related Well-Being among Finnish Dentists – A Prospective Follow-Up Study'.**

Main dimension	Dimension	Number of items	Source
General job resources	Supervisor support	3	Healthy Organisation Barometer HOB (Lindström, Hottinen, Kivimäki, & Länsisalmi, 1997)
	Social climate	3	HOB (Lindström et al., 1997)
	Innovative climate	3	HOB (Lindström et al., 1997)
	Appreciation	5	Hakanen (2004a)
	Organizational commitment	2	HOB (Lindström et al., 1997)
	Job control	9	The job content questionnaire (Karasek, 1979)
Profession-specific job resources	Co-operation with an assistant	4	Hakanen (2004b)
	Appreciation of the profession	5	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Direct and long-term results	6	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Variability of the required professional skills	3	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Peer contacts	4	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Entrepreneurship	3	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Positive contacts with patients	3	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
	Material rewards	3	Dentists' Experienced Job Resources Scales (te Brake, 2005; Finnish version Hakanen, 2004b)
Emotion work	Display of positive emotions	4	Frankfurt Emotion Work Scales (Zapf, Vogt, Seifert, Mertini, & Isic, 2001; Finnish version Hakanen, 2004b)
	Positive emotions	5	Frankfurt Emotion Work Scales (Zapf et al., 2001; Finnish version Hakanen, 2004b)
	Emotional sympathy and sensitivity	6	Frankfurt Emotion Work Scales (Zapf et al., 2001; Finnish version Hakanen, 2004b)
Work-life changes	Positiveness of the impact of the dentist law reform	7	Hakanen (2004b)
	Magnitude of the impact of the dentist law reform	6	Hakanen (2004b)
Performance	In-role performance	9	Goodman & Svyantek (1999)
	Extra-role performance	7	Goodman & Svyantek (1999)
Work-family interface	Positive spillover from work to home	4	Grzywacz & Marks (2000)
	Positive spillover from home to work	3	Grzywacz & Marks (2000)
Work motives	Intrinsic motivation	3	QPS-Nordic (Lindström et al., 2000)
	Extrinsic motivation	3	QPS-Nordic (Lindström et al., 2000)
Work engagement	Vigour	6	UWES (Schaufeli, Salanova, González-Roma, & Bakker (2002); Finnish version Hakanen (2002; 2004a)
	Dedication	5	
	Absorption	6	
Personality	Personal initiative	4	Frese, Fay, Hilburger, Leng, & Tag (1997)
	Optimism	3	Scheier, Carver, & Bridges (1994)
Retirement intentions	Planned and preferred retirement age	3	Ekerdt, Bossé, & Mogey (1980)
Health	Self-rated health	1	
	Work ability	1	Tuomi, Ilmarinen, Martikainen, Aalto, & Klockars (1997)
	Long-term health	1 + 1	Aronsson, Gustafsson, & Dallner (2000)
Well-being	Life satisfaction	5	Pavot & Diener (1993)

### 2.8.4 References

- Aronsson, G., Gustafsson, K., & Dallner, M. (2000). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology & Community Health*, 54(7), 502–509.
- Ekerdt, D. J., Bossé, R., & Moge, J. M. (1980). Concurrent change in planned and preferred age for retirement. *Journal of Gerontology*, 35, 232–240.
- Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Occupational and Organizational Psychology*, 70, 139–161.
- Goodman, S. A., & Svyantek, D. J. (1999). Person-organization fit and contextual performance: Do shared values matter. *Journal of Vocational Behavior*, 55, 254–275.
- Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Psychology*, 5, 111–126.
- Hakanen, J. (2002). Työuupumuksesta työn imuun – positiivisen työhyvinvointikäsitteen ja –menetelmän suomalaisen organisaatiossa. [From burnout to job engagement – validation of the Finnish version of an instrument for measuring job engagement (UWES) in an educational organization.] *Työ ja ihminen*, 16, 42–58.
- Hakanen, J. (2004a). *Työuupumuksesta työn imuun – työhyvinvointitutkimuksen ytimessä ja reuna-alueilla*. [From burnout to work engagement: In the core and on the fringes of work-related well-being.] Helsinki: Työterveyslaitos.
- Hakanen, J.J., (2004b). *Hammaslääkäreiden työhyvinvointi Suomessa*. [Work-related well-being among Finnish dentists.] Helsinki: Finnish Institute of Occupational Health and the Finnish Dental Association.
- Hakanen, J. J., Bakker, A. B., & Demerouti, E., 2005. How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences*, 113, 479–487.
- Hakanen, J., & Honkanen, H. (2001). *Helsingin kaupungin opetusviraston työyhteisön ja henkilöstön hyvinvoinnin kartoitus- ja kehittämistutkimus*. Helsinki: Työterveyslaitos ja Helsingin kaupungin opetusvirasto.
- Hakanen, J.J., & Perhoniemi, R., 2006. *Hammaslääkäreiden työhyvinvointi Suomessa. Kolmen vuoden seuranta-tutkimus*. [Work-related well-being among Finnish dentists. Three-year follow-up study.] Helsinki: Finnish Institute of Occupational Health and the Finnish Dental Association.
- Karasek, R.A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Lindström, K., Dallner, M., Elo, A.-L., Gamberale, F., Knardahl, S., Ørthede, E., Skogstad, A., & Hottinen, V. (2000). *Validation of the general nordic questionnaire (QPSNordic) for psychological and social factors at work*. Nord 2000:12. Copenhagen: Nordic Council of Ministers.
- Lindström, K. (1997). Assessing and promoting healthy work organizations. In Seppälä, P., Luopajarvi, T., Nygard, C., & Mattila, M. (Eds.), *From experience to innovation* (pp. 504–506). Helsinki: Finnish Institute of Occupational Health.
- Lindström, K., Hottinen, V., Kivimäki, M., & Länsisalmi, H. (1997). *Terve Organisaatio -kysely. Menetelmän perusrakenne ja käyttö*. [The Healthy Organization Barometer.] Helsinki: Työterveyslaitos, Psykologian osasto.
- Pavot, W., & Diener, E. (1993). Review of the satisfaction with life scale. *Psychological Assessment*, 5(2), 164–172.
- Schaufeli, W., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *The Journal of Happiness Studies* 3, 71–92.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguish-

- ing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078.
- te Brake, H. (2005). *Burnout and job engagement in dentistry*. Doctoral thesis. Amsterdam: University of Amsterdam.
- Tuomi, K., Ilmarinen, J., Martikainen, R., Aalto, L., & Klockars, M. (1997). Aging, work, life-style and work ability among Finnish municipal workers in 1981–1992. *Scandinavian Journal of Work, Environment & Health*, 23, Suppl 1, 58–65.
- Zapf, D., Vogt, C., Seifert, C., Mertini, H., & Isic, A. (1999). Emotion work as a source of stress: The concept and development of an instrument. *European Journal of Work and Organizational Psychology*, 8, 371–400.

### 2.8.5 International publications on data

- Ahola, K., & Hakanen, J. (2007). Job strain, burnout, and depressive symptoms: A prospective study among dentists. *Journal of Affective Disorders*, doi:10.1016/j.jad.2007.03.004.
- Hakanen, J. (2006). On the sunny side of well-being: towards positive occupational health psychology [Keynote speech]. In: the Abstract book of the 8th Conference on Social and Community psychology. Norway, Trondheim, 9–10 November.
- Hakanen, J. J., Bakker, A. B., & Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences*, 113, 479–487.
- Hakanen, J., Bakker, A., & Demerouti, E. (2004). Do Job Resources Mitigate the Effect of Job Demands on Work Engagement? In: Book of abstracts of The Second European Conference on Positive Psychology. Italy, Verbania, 5.–8. July.

## 2.9 The well-being and development of personnel in the Department of Education, Helsinki

*Jari Hakanen*, Finnish Institute of Occupational Health, Finland

### 2.9.1 Purpose of the study

The purpose of the study was to investigate the job demands and job resources and their associations with burnout and work engagement among Finnish teachers and other staff at schools and in educational administration.

### 2.9.2 Study design and sample

A questionnaire was delivered to all teachers and other staff of the Department of Education, Helsinki, Finland (Hakanen & Honkanen, 2001). Data were collected during January and February 2001. Altogether 3365 employees participated in the study (Table 14). Teachers (N = 2038) from almost 200 elementary (n = 843), lower secondary (n = 497), upper secondary (n = 278), and vocational schools (n = 217) returned the questionnaire anonymously in a prepaid envelope to the principal researcher at the

Finnish Institute of Occupational Health. In addition, 1327 employees other than teachers (e.g. maintenance staff at schools, principals, school psychologists, social workers, and administrative personnel) participated in the study. Unfortunately, there was no possibility to send reminders to those who did not respond to the questionnaire. The response rate was 52%. Most participants were female (79%). Of the teachers, 4% were under 25 years old, 30% were between 26 and 35 years, 25% between 36 and 45 years, 27% between 46 and 55 years, and 14% were over 55 years of age. The mean job tenure as a teacher was 13.5 years. A total of 63% had permanent jobs, and 37% had fixed-term contracts. On average, participants worked 36.6 hours per week (SD = 8.9).

**Table 14** Participants in the study.

Occupation	Respondents (N)	Percentage
Principal	108	3
Deputy Principal	59	2
Class teacher	672	21
Subject teacher	929	28
Special teacher	241	7
Teacher in a vocational education institute	196	6
Study adviser	48	2
School social worker	29	1
School psychologist	24	1
School secretary	89	3
School helper	155	5
Janitor	89	3
School cook or cleaner	255	8
School host/hostess in charge	80	3
Specialist, planning officer in administration	90	3
Leader/supervisor in administration	44	1
Secretary in administration	39	1
Other	113	3
Missing	105	
Total	3365	100

### 2.9.3 Main variables

*Work Engagement* was assessed using the Utrecht Work Engagement Scale (UWES) (Schaufeli, Salanova, González-Roma, & Bakker, 2002). The factorial validity of the Finnish version of the UWES has been demonstrated by this sample (Hakanen, 2002; 2004). *Job Resources* (job control, supervisor support, information, social climate, innovative climate, and appreciation) were basically assessed (but somewhat supplemented with additional items and scales) using the Healthy Organization Barometer (HOB) Questionnaire, a well-validated questionnaire that is widely used in Finnish organizations (Lindström, Hottinen, Kivimäki, & Län-

sisalmi, 1997). The instrument has also been translated into several languages, and used in many multinational organizations in Finland and elsewhere (Lindström, 1997).

**Table 15 Dimensions of Positive Factors in the Study ‘The Well-Being and Development of the Personnel in the Department of Education, Helsinki’.**

Main dimension	Dimension	Number of items	Source
Job resources	Job control	3	HOB (Lindström et al., 1997)
	Supervisor support	3	HOB (Lindström et al., 1997)
	Information	3	HOB (Lindström et al., 1997)
	Social climate	3	HOB (Lindström et al., 1997)
	Innovative climate	3	HOB (Lindström et al., 1997)
	Appreciation	4	Hakanen (2001)
	Organizational commitment	3	HOB (Lindström et al., 1997)
Reciprocity	Reciprocity between efforts and rewards	4	Hakanen & Honkanen (2001)
Work engagement	Vigour	6	UWES (Schaufeli et al., 2002; Finnish version Hakanen, 2002; 2004)
	Dedication	5	
	Absorption	6	
Health	Self-rated health	1	
	Work ability	1	Tuomi, Ilmarinen, Martikainen, Aalto, & Klockars (1997)

#### 2.9.4 References

- Hakanen, J. (2002). Työuupumuksesta työn imuun - positiivisen työhyvinvointikäsitteen ja –menetelmän suomalaisen version validointi opetusalan organisaatioissa. [From burnout to job engagement – validation of the Finnish version of an instrument for measuring job engagement (UWES) in an educational organization.] *Työ ja ihminen*, 16, 42–58.
- Hakanen, J. (2004). *Työuupumuksesta työn imuun - työhyvinvointitutkimuksen ytimessä ja reuna-alueilla*. [From burnout to work engagement: In the core and on the fringes of work-related well-being.] Helsinki: Työterveyslaitos.
- Hakanen, J., & Honkanen, H. (2001). *Helsingin kaupungin opetusviraston työyhteisön ja henkilöstön hyvinvoinnin kartoitus- ja kehittämistutkimus* [Study of well-being and development of personnel of the Department of Education in Helsinki]. Helsinki: Työterveyslaitos ja Helsingin kaupungin opetusvirasto.
- Lindström, K. (1997). Assessing and promoting healthy work organizations. In Seppälä, P., Luopajarvi, T., Nygard, C., & Mattila, M. (Eds.), *From experience to innovation* (pp. 504–506). Helsinki: Finnish Institute of Occupational Health.
- Lindström, K., Hottinen, V., Kivimäki, M., & Länsisalmi, H. (1997). *Terve Organisaatio –kysely. Menetelmän perusrakenne ja käyttö*. [The healthy organization barometer.] Helsinki: Työterveyslaitos, Psykologian osasto.
- Schaufeli, W., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *The Journal of Happiness Studies*, 3, 71–92.
- Tuomi, K., Ilmarinen, J., Martikainen, R., Aalto, L., & Klockars, M. (1997). Aging, work, life-style and work ability among Finnish municipal workers in 1981–1992. *Scandinavian Journal of Work, Environment & Health*, 23, Suppl 1, 58–65

### 2.9.5 International publications on data

- Bakker, A., Hakanen, J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*, 99,(2) 274–284
- Hakanen, J., Bakker, A., & Schaufeli, W. (2006). Burnout and engagement among teachers. *Journal of School Psychology*, 43, 495–513.
- Hakanen J. Testing a model of engagement and burnout. In: Abstract book of The 25<sup>th</sup> International Congress of Applied Psychology (ICAP). Symposium on Job engagement. 2002 July 7–12; Singapore.
- Hakanen, J., Bakker, A., & Demerouti, E. (2004). Do Job Resources Mitigate the Effect of Job Demands on Work Engagement? In: Book of abstracts of The Second European Conference on Positive Psychology. Italy, Verbania, 5.–8. July.

## 2.10 Factors affecting return to work, work ability and work satisfaction among cancer patients – A Nordic questionnaire study

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### 2.10.1 Purpose of the study

The purpose of the study was to investigate factors affecting return to work, work ability, and work engagement among cancer survivors, and to compare these factors and the well-being of cancer survivors with a matched reference group.

### 2.10.2 Study design and sample

Although this is a Nordic project, the data presented here are Finnish. Altogether 1000 patients who had been diagnosed with breast cancer, lymphoma (men and women), or testicular or prostate cancer in 1997–2001 were selected from the Patient Register of the Department of Oncology at Helsinki University Hospital. The selected patients had to have a good prognosis (no recurrence except for lymphoma and prostate cancer patients) and be 25–57 years of age at the time of the diagnosis. Other inclusion criteria were: no previous cancer, no ongoing treatment with cytostatic drugs, native language Finnish or Swedish, and resident in the Hospital District of Helsinki and Uusimaa, Finland. In addition, a reference group of 1500 persons was selected from the files of the Population Register Centre. The referents were selected randomly from the general population living in the same districts and having the same age and gender distribution as the group of cancer survivors (Taskila et al., 2005; Hakanen, Taskila, & Lindbohm, 2006).

### 2.10.3 Questionnaire

The questionnaire forms were mailed to the patients and the referents, and two reminders were sent at a later date. A total of 825 cancer survivors (82.5%) and 1026 referents (68%) returned the completed questionnaires. The referents who reported having had cancer were excluded from the analyses (31 persons). Altogether 591 cancer survivors (437 women and 154 men) and 757 referents (552 women and 205 men) were employed and included in the study sample. Of the women, 90% (n = 394) had breast cancer, and 10% had lymphoma (n = 43). Among the men, 41% had lymphoma (n = 64), 30% had prostate cancer (n = 46), and 29% had testicular cancer (n = 44). Of those who had had chemotherapy, 50 % were women and 43 % were men.

### 2.10.4 Main variables

*Work Engagement* was assessed using the Utrecht Work Engagement Scale (UWES) (Schaufeli, Salanova, González-Roma, & Bakker, 2002). Also assessed were *social job resources* (organizational climate and social support at work, i.e. colleague and supervisor support) based on QPSNordic (questionnaire), and lack of job resources or negative job resources based on the interviews with cancer patients (colleague-avoidance behaviour and supervisor-avoidance behaviour). In addition, *optimism* was measured using the Life Orientation Test (Scheier, Carver, & Bridges, 1994).

**Table 16 Dimensions of Positive Factors in the Study 'Factors Affecting Return to Work, Work Ability and Work Satisfaction among Cancer Patients – A Nordic Questionnaire Study'.**

Main dimension	Dimension	Number of items	Source
Job resources	Social (supervisor and colleague) support	5	QPSNordic (Elo, Dallner, Gamberrale, Hottinen et al., 2001)
	Organizational climate	3	QPSNordic (Elo et al., 2001)
Organizational commitment	Organizational commitment	3	QPSNordic (Elo et al., 2001)
Work engagement	Vigour	6	UWES( Schaufeli et al., 2002; Finnish version Hakanen, 2002; 2004)
	Dedication	5	
	Absorption	6	
Personality	Optimism	6 (3 filler questions)	(Scheier et al., 1994)
Health	Self-rated health	1	
	Work ability	1	Tuomi, Ilmarinen, J., Martikainen, R., Aalto, L., & Klockars 1997

### 2.10.5 References

- Elo, A.-L., Dallner, M., Gamberale, F., Hottinen, V., Knardahl, S., et al., (2001). *QPSNordic-käsikirja: pohjoismainen työn psyykkisten ja sosiaalisten tekijöiden yleiskysely*. Helsinki, Työterveyslaitos.
- Hakanen, J. (2002). Työuupumuksesta työn imuun - positiivisen työhyvinvointikäsitteen ja -menetelmän suomalaisen version validointi opetusalan organisaatiossa. [From burnout to job engagement – validation of the Finnish version of an instrument for measuring job engagement (UWES) in an educational organization.] *Työ ja ihminen*, 16, 42–58.
- Hakanen, J. (2004). *Työuupumuksesta työn imuun - työhyvinvointitutkimuksen ytimessä ja reuna-alueilla*. [From burnout to work engagement: In the core and on the fringes of work-related well-being.] Helsinki: Työterveyslaitos.
- Hakanen, J., Taskila, T., & Lindbohm, M.-L. (2006). Social job resources, optimism and work engagement among employed cancer survivors and the general working population. In CD-rom of the 26th International Congress of Applied Psychology. Greece, Athens, 16–21 July 2006.
- Schaufeli, W., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *The Journal of Happiness Studies* 3, 71–92.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1063–1078.
- Taskila, T., Lindbohm, M.-L., Martikainen, M., Lehto, U.-S., Hakanen, J., & Hietanen, P. (2006). Cancer survivors' received and needed social support from their work place and the occupational health services. *Supportive Care in Cancer*, 14, 427–435.
- Tuomi, K., Ilmarinen, J., Martikainen, R., Aalto, L., & Klockars, M. (1997). Aging, work, life-style and work ability among Finnish municipal workers in 1981–1992. *Scandinavian Journal of Work, Environment & Health*, 23, Suppl 1, 58–65.

### 2.10.6 International publications on data

- Hakanen, J., Taskila, T., & Lindbohm, M.-L. (2006). *Social job resources, optimism and work engagement among employed cancer survivors and general working population*. In: CD-rom of the 26th International Congress of Applied Psychology. Greece, Athens, 16–21 July 2006.
- Hakanen, J., Taskila, T., & Lindbohm, M.-L. (2006). *Social job resources, optimism and work engagement among female employed cancer survivors and general working population*. In: the CD-rom of the IPOS 8 th world Congress of psycho-oncology 21.10.2006, Venezia, Italia.
- Taskila, T., Lindbohm, M.-L., Martikainen, M., Lehto, U.-S., Hakanen, J., & Hietanen, P. (2006). Cancer survivors' received and needed social support from their work place and the occupational health services. *Supportive Care in Cancer*, 14, 427–435.

## 2.11 Validation of the general Nordic Questionnaire (QPS Nordic) for Psychosocial Factors at Work

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### 2.11.1 Purpose of the study

The purpose of the project was to develop and validate the joint Nordic questionnaire, QPSNordic. The questionnaire was constructed by Lindström, Dallner, Elo, Gamberale, Knardahl, et al., (2000) as a comprehensive instrument for the measurement of important psychological and social factors in the workplace. It has been designed to (a) yield comprehensive data on important psychological and social factors to establish a solid basis for initiating and evaluating interventions and organizational change, (b) produce comprehensive data for scientific studies on relationships between work and health, and (c) provide documentation on changes in working conditions.

The first stage of constructing QPSNordic was a review of Nordic instruments addressing factors of the psychological and social work environment. Research institutions that had developed and used questionnaires in their research on working life were contacted to obtain information about the purpose, validity, and current applications of their instruments. Four or five questionnaires from each participating Nordic country were selected for a more thorough examination.

In 1995, a state-of-the art report *Measurement of Psychological and Social Factors at Work* was published by Lindström, Borg, Dallner, Elo, Gamberale, et al. (1995).

### 2.11.2 Study design and data collection

The database of items for QPSNordic was created from 19 Nordic questionnaires and other international scales and items on psychosocial factors (Lindström et al., 1995). Approximately 2600 questionnaire items were evaluated by members of the research group during the selection process.

The main principles in selecting the topics and dimensions were their relevance and importance to present-day working life and their relevance to occupational health and well-being. A review of the Nordic questionnaire database and earlier studies suggested that the following topics should be included: job demands, control at work, predictability, mastery of work, leadership, social support, bullying and harassment at work, organizational culture, working groups and teams, organizational commitment, work motives, work centrality, and interaction between work and private life (Lindström, Dallner, Elo, Gamberale, Knardahl, et al., 1997). Based on these findings a prototype for the new method was constructed.

Data were collected with the prototype version from heterogeneous populations in four Nordic countries to test the prototype questionnaire. Respondents were workers of organizations representing several sectors of work life, including industrial production, private services, public administration, and health care. The stages of data collection, their purpose, targets, numbers of subjects, and results are summarized on Table 17.

**Table 17 The Stages of the Study, the Goals, Targets, Numbers of Observations and Results.**

Stage of the study	Aim of the stage and results		N	Results
	Why	How		
Readability	Test of readability	Interview of different respondents from the four Nordic countries	40	Reformulation of some questions to remove ambiguous wording
1st data collection (Stage 1)	Conceptual structure, scale reliability Measurement modelling	Data collection in 16 organizations from the four Nordic countries	1015	Construction of measurement scales, exclusion of items, deciding on the structure of QPSNordic
2nd data collection (Stage 2)	Retesting of the structure and scale reliabilities. Predictive validity and structural modelling	Data collection in 5 organizations from the three Nordic countries	995	Confirmation of the construct and predictive validity of QPSNordic
3rd data collection Retest data	Investigating test-retest reliability	Data collection in 3 organizations from two Nordic countries	393	Confirmation of test-retest reliability
4th data collection Case study: Survey-feedback data	Assessing the feasibility of QPSNordic for work place interventions	16 feedback sessions including planning of improvements Questionnaire study on the success of feedback	n= ap- prox. 200 n= 35	Recommendations on key items for feedback. Guidelines for organization development based on QPSNordic

### 2.11.3 Main study variables

The questions and scales were grouped to those measuring items at individual-, social and organizational-, and task level.

**Table 18 The Structure of the Questionnaire.**

Task level	Social and organizational level	Individual level
<ul style="list-style-type: none"> <li>• Job demands</li> <li>• Control at work</li> <li>• Role expectation</li> <li>• Predictability at work</li> </ul>	<ul style="list-style-type: none"> <li>• Social interaction</li> <li>• Leadership</li> <li>• Organizational culture and climate</li> <li>• Group work</li> </ul>	<ul style="list-style-type: none"> <li>Commitment to organization</li> <li>Mastery of work</li> <li>Preference for challenge</li> <li>Predictability, individual</li> <li>Work motives</li> <li>Work centrality</li> <li>Interaction between work and private life</li> </ul>

The health and well-being outcomes used included:

- job involvement
- job satisfaction
- self-rated work ability
- life orientation
- GHQ 12, General mental health
- emotional exhaustion
- distress symptoms.

#### 2.11.4 Positive factors at work

**Table 19 The Scales Measuring Positive Factors at Work Involved in QPSNordic.**

		Number of items
Task level	Learning demands at work	4
	Positive challenge at work	3
	Role clarity	3
	Control of decision	5
Social and organizational level	Support from superior	3
	Support from co-workers	2
	Support from friends	3
	Empowering leadership	3
	Fair leadership	3
	Innovative climate	3
	Human resource primary	3
Individual level	Perception of mastery	4
	Work-life interaction	2
	Extrinsic motivation to work	3
	Preference for challenge	3
		3

#### 2.11.5 Conclusions

The criterion validity of QPSNordic was adequate when compared to prior research results on associations between psychological and social factors at work and workers' well-being. Emotional exhaustion and job involvement were well predicted by the central scales of QPSNordic. Positive challenge at work, control in decisions, and organizational commitment were important in explaining both emotional exhaustion and job involvement.

Structural equation modelling, criterion validity in relation to well-being, test-retest reliability, and item-bias analysis provided detailed information on the feasibility of the questionnaire.

QPSNordic takes account of the continuous development or change in organizations, including changes in innovative climate, which is one essential element of learning organizations. Gender and age equality issues and the work-life interface are also considered, because the change in values is closely related to these issues, which are receiving increasing attention.

### 2.11.6 References

- Lindström, K., Borg, V., Dallner, M., Elo, A.-L., Gamberale, F., Knardahl, S., Ørhede, E., & Raivola, P. (1995). *Measurement of psychological and social factors at work*. Nord 1995:39. Copenhagen: Nordic Council of Ministers.
- Lindström, K., Dallner, M., Elo, A.-L., Gamberale, F., Knardahl, S., Skogstad, A., & Ørhede, E. (Eds.) (1997). *Review of psychological and social factors at work and suggestions for the general Nordic questionnaire (QPSNordic)*. Nord 1997:15. Copenhagen: Nordic Council of Ministers.
- Lindström, K., Dallner, M., Elo, A.-L., Gamberale, F., Knardahl, S., Ørhede, E., Skogstad, A., & Hottinen, V. (2000). *Validation of the general Nordic questionnaire (QPSNordic) for psychological and social factors at work*. Nord 2000:12. Copenhagen: Nordic Council of Ministers.

## 2.12 Rewarding and creative elderly care work

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### 2.12.1 Purpose of study

The aim of the study is to develop a set of methods which can be used when developing work content and organizations in elderly care. This, in turn, involves find ways in which positive factors and challenges in elderly care work can be increased and promoted.

### 2.12.2 Study design and target groups

The method development project includes several parts and components which potentially increase the positive and rewarding characteristics in elderly care work and give an opportunity to create and utilize new innovative solutions. The ultimate aim is to increase both the quality of care for elderly people and the personnel's motivation, job engagement and competence.

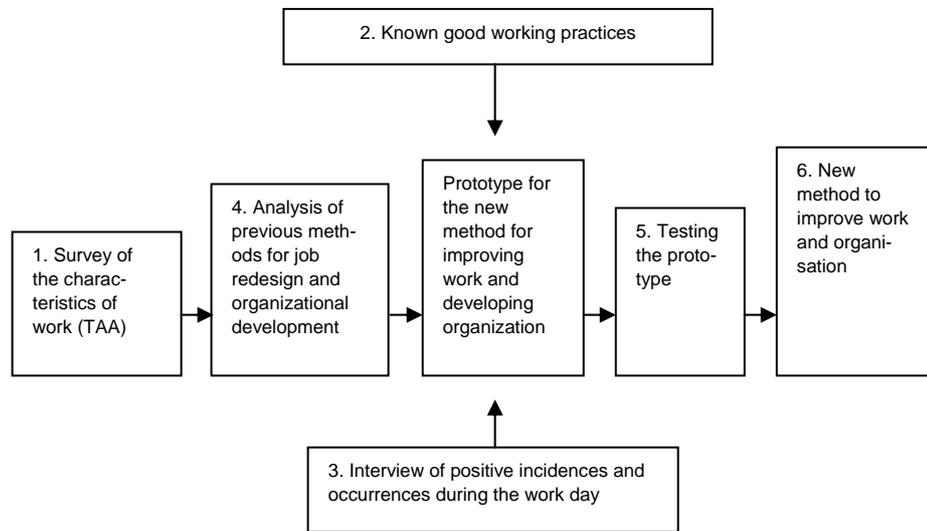


Figure 1 The Project Study Design: The Process Elements of Method Development.

### 2.12.3 The various phases in the projects

#### Work analysis (1)

The present work characteristics and organization are analysed using the TAA method (Tätigkeitsanalyse für Altenpflege) (Büssing & Glaser, 2002).

#### Analysis of good work organizations in elderly care = Good practices (2)

Between six and eight elderly care organizations are chosen to establish good working practices. They are selected from the 'Finnish 10 Town study cohort' (Kivimäki, Elovainio, Vahtera & Ferrie, 2003). The selection criterion is that the organization has a high score on four scales from the Team Climate Inventory (Anderson & West, 1994). The scales are: participation, support for innovation, vision, and task orientation. The most recent survey data of the aforementioned cohort study from 2006 is used.

Data on good working practices in job design, organization and patient/elderly care are collected by interviewing supervisors and personnel. The viewpoints of the elderly, supervisors and personnel are analysed in order to identify the reasons why certain practices are perceived as good.

#### Daily experiences of job engagement and flow during the work day (3)

At the end of a work day nurses and other personnel are interviewed about positive experiences and flow type experiences during that day.

#### The analysis of previous developmental projects in the workplace (4)

Previously implemented developmental projects are selected from different types of elderly care organizations and data on the perceptions of

various personnel groups are gathered. The analysis is based on following aspects (Övretveit, 1991; Stevrin 1991):

- process of development
- engagement and motivation of those who participated
- success of the development project
- quantitative data available from intervention projects.

The criteria for evaluation are:

- actual context in organization
- impact of the project
- learning during the process
- future prospects after the intervention.

#### *2.12.4 Constructing the new method set*

Based on these 1–4 data collection phases, a new method set prototype for the development of elderly care work will be constructed and tested in three organizations.

#### *2.12.5 Dissemination of the new method*

The new method will be incorporated into the advanced training curriculum of the three collaboration advanced training institutes for nurses in order to assess its use among head of ward nurses at their work places.

Dissemination of the new method will be organized partly through the advanced training courses in nursing training institutes and partly through the website of the Finnish Institute of Occupational Health.

#### *2.12.6 References*

- Anderson, N., & West, M. A. (1994). *The Team Climate Inventory*. Windsor; Berks ASE.
- Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, 43(1), 83–104.
- Büssing, A., & Glaser, J. 2002. Das Tätigkeits- und Arbeitsanalyseverfahren für das Krankenhaus-Selbstbeobachtungsversion (TAA-KH-S). Göttingen : Hogrefe.
- Lindström, K., & Molander, G. 2006. Work organization interventions in health care. In Carayon, P. (Ed.), *Handbook of human factors and ergonomics in health care and patient safety* (pp.1–14). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kivimäki, M., Elovainio, M., Vahtera, J., & Ferrie, J.E.(2003). Organisational justice and health of employees: prospective cohort study. *Occupational and Environmental Medicine*, 60, 27–34.
- Stevrin, P. Utvärdering för förändring. Studentlitteratur, Lund 1991.
- Övretveit, J. (1991). Quality in health promotion. *Health Promotion International*, 11(1), 55–62.

## 2.13 Validation of questions on recovery<sup>1</sup>

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### 2.13.1 Purpose of the study

The study aimed to investigate the relationships between self-ratings of recovery and salivary cortisol. Previous research suggests that cortisol is associated with rest and recovery (Lundberg, 2005).

### 2.13.2 Study design and sample

The participants were part of a group of 169 employees of a government authority. Employees who were on parental leave, who were recorded as being on sick leave, or who worked mainly at another location were excluded. The remaining 120 employees were given a questionnaire, which was completed by a total of 107 participants, giving a response rate of 89%. The information collected from the questionnaire was used to recruit individuals to participate in a psychophysiological study, which among other things included measurements of salivary cortisol. Individuals who did not provide important demographic data, as well as part-time employees ( $n = 16$ ), those with illnesses that required medical treatment, and pregnant women were excluded. The remaining participants ( $n = 56$ ) were contacted by telephone and invited to participate. Of these, 14 declined because participation would have conflicted with other commitments (meetings, trips, family situation, etc.), and 4 declined due to changes in their work situation; 12 individuals could not be reached by mail or telephone. When the psychophysiological study was conducted and the cortisol tests were analysed, one individual was excluded due to greatly deviating cortisol values compared to the other study participants (i.e. an outlier). The final healthy study group consisted of 13 men and 12 women ( $n = 25$ ) aged between 24 and 62 years. The men ( $M = 40.1$  years,  $SD = 12.5$ ) were slightly younger than the women ( $M = 41.7$  years,  $SD = 11.2$ ). With the exception of one woman, all participants were white-collar workers with either a university or university college degree. All of them were employed full-time and worked normal office hours (Lindfors, 2002).

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<sup>1</sup> The complete study is reported in "Relationships between self-rating of recovery from work and morning salivary cortisol" (Gustafsson, Lindfors, Aronsson & Lundberg, 2008).

### *2.13.3 Procedure*

Prior to the sampling of salivary cortisol, all participants completed a questionnaire that included questions asking for details on demographic information and rest and recovery (Lindfors, 2002; Gustafsson, Lindfors, Aronsson, & Lundberg, 2006; Gustafsson, Lindfors, Aronsson & Lundberg, 2008). Measurements of salivary cortisol were carried out individually on two working days according to oral and written instructions from the investigators. Saliva samples were collected six times each day, with the first sample being obtained 15–30 minutes after waking, followed by continued self-administered sampling approximately every second hour throughout both sessions, ending at 20.00 hours. To reduce intra-individual variation in circadian rhythm, all participants were asked to rise and go to bed at the same times during the different days of measurement. Self-ratings of rest and recovery and sampling of saliva were performed on different days, and the entire data collection took place during a period of approximately six months.

The saliva samples were collected in plastic tubes containing a cotton roll. Participants were instructed not to brush their teeth, eat, drink, or smoke 15 minutes before collecting the saliva. For each sample, they were asked to note the date and time of the day. Minor differences between the individuals existed in time of awakening and time of saliva sampling. However, these differences were not assumed large enough to have markedly influenced the results. The saliva samples were stored in a freezer (−18°C) until centrifuged and analysed using radioimmunoassay (RIA).

### *2.13.4 Main questionnaire variables*

The items were formulated to describe rest and recovery from work in terms of feelings of rest, recovery and fatigue, problems sleeping, and work-related worry and discomfort. These items have been used in several previous studies (Aronsson, Svensson, & Gustafsson, 2003; Aronsson & Gustafsson, 2005; Von Thiele, Lindfors, & Lundberg, 2006). The internal consistency (Cronbach's alpha) for all 15 rest and recovery items included in this study was 0.85.

**Table 20 Fifteen Questions on Rest and Recovery**

Item	Rest and recovery questions
<b>Recovered/rested</b>	
E6 <sup>a</sup>	Do you feel thoroughly rested when you start working in the morning?
E11 <sup>a</sup>	Do you feel rested and recovered when you return to work after a weekend?
E12 <sup>a</sup>	Do you feel rested and recovered when you return to work after a mid- to long absence (e.g. long weekend, short vacation)?
E13 <sup>a</sup>	Do you feel rested and recovered when you return to work after several weeks' leave from work or vacation?
<b>Fatigue</b>	
E8 <sup>a</sup>	Do you feel energetic during a working day?
E7 <sup>a</sup>	Do you feel very tired during the working day?
E10 <sup>a</sup>	Do you experience mental fatigue after a working day?
E9 <sup>a</sup>	Do you experience physical fatigue after a working day?
<b>Sleep problems</b>	
E17 <sup>b</sup>	Upon waking during the past week, how often have you felt that you have had sufficient sleep?
E16 <sup>c</sup>	During the past week, have you had difficulties sleeping (difficulties falling asleep, waking too early due to work), because work-related thoughts have kept you awake?
E14 <sup>a</sup>	During the past three months, have you had difficulties sleeping because work-related thoughts have kept you awake?
E19 <sup>d</sup>	How many hours per night do you normally sleep?
E18 <sup>e</sup>	How well do you normally sleep?
<b>Worry/discomfort</b>	
E144B <sup>f</sup>	I often worry about something.
E15 <sup>g</sup>	Do you sometimes feel uneasy on your way to work?

Notes: a. Very often (1), Quite often (2), Sometimes (3), Seldom (4), Never (5). . b. No mornings (1), some mornings (2), Most mornings (3), All mornings (4). . c. Not at all (1), One night (2), Some nights (3), Every night (4). d. Number of hours. e. Very poorly (1), Quite poorly (2), Varies (3), Quite well (4), Very well (5). f. Scale from 1 to 5: Disagree completely (1), Agree completely (5). g. Not at all (1), Seldom (2), A few days per month (3), One day per week (4), A couple of days per week (5), Every day (6).

### 2.13.5 References

- Aronsson, G., Svensson, L., & Gustafsson, K. (2003). Unwinding, recuperation, and health among compulsory school and high school teachers in Sweden. *International Journal of Stress Management* 10, 217–234.
- Aronsson, G., & Gustafsson, K. (2005). Vacation – still an issue of workers' protection? An empirical study of vacation and recuperation. *International Journal of Health Services* 35, 143–169.
- Gustafsson, K., Lindfors, P., Aronsson, G., & Lundberg, U. (2006). Validering av frågor avseende nedvarvning och återhämtning - Samband mellan salivkortisol och subjektiva skattningar. Arbete och hälsa, 2006(7).
- Gustafsson, K., Lindfors, P., Aronsson, G. & Lundberg, U. (2008). Relationships between self-rating of recovery from work and morning salivary cortisol. *Journal of Occupational Health* 50, 24–30.
- Lindfors, P. (2002). Psychophysiological aspects of stress, health and well-being in teleworking woman and men. Doctoral thesis, Department of Psychology. Stockholm: Stockholm University.
- Lundberg, U. (2005). Stress hormones in health and illness. The roles of work and gender. *Psychoneuroendocrinology* 30, 1017–1021.
- Von Thiele, U., Lindfors, P., & Lundberg, U. (2006). Self-rated recovery from work stress and allostatic load in woman. *Journal of Psychosomatic Research* 61, 237–242.

## 2.14 Relationship between a behavioural measure of good long-term health and self-rated health

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### 2.14.1 Purpose of the study

To construct a measure of good long-term health and investigate its relationship to self-rated health and symptoms.

### 2.14.2 Sample

The analyses are performed on data from the project 'Burnout in Sweden' (Utbränning i Sverige) (Hallsten, Bellaagh, & Gustafsson, 2002). The total study group consisted of a representative sample based on a questionnaire supplementing Sweden's standard series of labour-market surveys (Arbetskraftsundersökningen AKU). Data were gathered on two separate occasions. The first questionnaire was administered in the late autumn of 2000 (Time 1), and was responded to by 4997 persons, giving a response rate of 68%. On follow-up during the autumn of 2001 (Time 2), the questionnaire was sent to the same people who had responded to the first questionnaire; 4318 people responded, giving a response rate of 86%. The current analysis has been restricted to people in full-time paid employment and in the age range 20–65 on both occasions when the questionnaire was administered. The final group for analysis was reduced somewhat further due to attrition with regard to the study's outcome variable, representing a combination of sickness absenteeism and sickness presenteeism, i.e. between Time 1 (T1) and Time 2 (T2).

### 2.14.3 Long-term health and self-rated health

The two items that provided the basis for the sample were formulated as described in the following.

#### Sickness presenteeism

Question: Has it happened over the previous 12 months that you have gone to work despite feeling that you really should have taken sick leave due to your state of health?

The responses were recorded on a five-point response scale: Not relevant, have not been sick over the previous 12 months (1); Never (2); Yes, once (3), Yes, 2–5 times (4), Yes, more than 5 five times (5). The re-

sponses 'Not relevant, have not been sick over the previous 12 months' (1) and 'Never' (2) were merged for the logistic regression.

#### *Days of sickness absence*

Question: How many days in total have you been away from work and on reported sick leave during the previous 12 months?

The responses were recorded on a five-point response scale: None (1); Fewer than 6 days (2), 6–10 days (3); 11 to 23 days (4), More than 24 days (5). The response scale was dichotomized for analysis of days of sickness absence into 'None' (1) and 'Less than 6 days or more' (2).

The long-term health outcome variable, which also restricts the number of respondents due to partially missing data (among the questionnaire responses), was created by combining sickness presenteeism and sickness absenteeism (measured in days) at T1 and T2 as follows. As a limited amount of sickness presence (for example, a mild cold or cramp) is not at all uncommon, we included subjects who had been present when sick on just one occasion a year among those with long-term good health. Thus, by people in long-term good health we mean individuals who had at most one occasion of sickness presence per year and at most one occasion of sickness absence (of a maximum of five days) per year. Following exclusion of these groups, and after applying the aforementioned criteria for the outcome variable, we obtained a study group of 2357.

Of the 2357 individuals, 679 (29%) met the criterion for the one year, but not for the other; they had been 'healthy' for the first year but not for the second, or vice versa. In order to include these people in the study, the criterion for what was to be counted as 'healthy' was weakened. People who had 10 days of sickness absence or fewer during the first or the second year were regarded as 'healthy'. On this criterion, a large majority of the 679 were classed as 'ill' (554 individuals) and a fairly small group ( $n = 65$ ) as 'healthy'. However, it was still not possible to classify 60 persons on the basis of the specified criteria, and hence they were excluded from the data processing. Thus, in total, the study group ultimately comprised 2297 persons, of which 641 (28%) belonged to the group in long-term good health and 1656 to those not in long-term good health or who were sick.

#### *2.14.4 Self-rated health and ill-health*

Question: How do you rate your general state of health? The responses were recorded on a five-point scale: Good (1), Quite good (2), Variable (3), Rather poor (4), Poor (5). For the regression analyses, the response scale was dichotomized into: Good/Quite good (1), Variable/Rather poor/Poor (2).

Question: During the previous three months have you suffered from any of the following complaints: muscular pain, heartburn, acid indigestion, smarting pain in the pitch of the stomach, and upset stomach?

The five-point response scale was dichotomized into: Every day/A couple of days a week/A couple of days a month (1), One day a week/Seldom or Not at all (2).

#### *2.14.5 Sickness absence/presence and self-rated health and complaints*

Table 21 shows there are clear relationships between the behavioural measure of long-term health and the self-ratings. In the analyses the presence and absence variables were dichotomized into one long-term good health group and three other health groups. The associations are relatively strong, but there were also problems of ill-health among members of the long-term good-health group: 57% of those in long-term good health considered that their health status was 'Good', while a further 34% said it was 'Rather good', which places more than 90% of respondents in these two categories. Sickness absenteeism may be regarded as a relational variable, which reflects the relationship between the individual's state of health and job demands. The fact that some people with health problems nonetheless ended up in the long-term good-health category is probably because their ill-health or possible illnesses did not constitute a functional obstacle in relation to their tasks. Further, these people may also be said to enjoy good work health.

Of the two intermediate alternatives, the group with high sickness presenteeism/low sickness absenteeism seems to have had a somewhat more problematic health situation than the group with low sickness presenteeism/high sickness absenteeism. This result applies to the overall group, and also when the material is divided into seven broad occupational groups. Further, this pattern is also reproduced when the material is analysed in relation to sex and to age and with respect to muscle and joint complaints and stomach complaints. In summary, the relationship pattern between the used long-term health measure used and self-ratings of health and complaints is rather stable.

When the combined measure (presence and absence) was compared with the simple measure of sickness absence with respect to variation in self-rated health and complaints it differentiated considerably better. This is an argument for incorporating the presenteeism variable into a measure of long-term good health.

**Table 21 Associations between the Various Combinations of Sickness Absence/ Sickness Presence and General State of Health, Muscle and Joint Complaints and Stomach Complaints (Based on Measurements at T2).**

	Low presence/ Low absence (n = 820)	Low presence/ High absence (n = 200)	High presence/ Low absence (n = 772)	High presence/ High absence (n = 442)
Self-rated good health	57	34	26	12
Several days a week				
- pain in muscles/joints	14	28	34	51
- stomach complaint	6	11	19	27

### 2.14.6 References

- Aronsson, G., Gustafsson, K., & Dallner, M. (2000). Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology & Community Health*, 54(7), 502–509.
- Aronsson, G., & Gustafsson, K. (2002). Sjuknärvaro – förekomst och utvecklingstendenser. *Arbete och hälsa*, 2002(8).
- Hallsten, L., Bellaagh, K., & Gustafsson, K. (2002). Utbränning i Sverige – en populationsstudie. *Arbete och hälsa*, 2002(6).



### 3. Concluding remarks

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The recent calls for ‘Positive Organizational Behavior’ (Luthans, 2002) and for ‘Positive Organizational Scholarship’ (Cameron, Dutton, & Quinn, 2003) are, firstly, based on the observation that there has been a strong negative bias in psychological research. The ratio of scientific publications on positive states versus negative states has been 1:14 (Myers, 2000). Thus, it is apparent that there is a clear gap in the knowledge of positive factors and their consequences for human flourishing. Secondly, it has been found that positive and negative affect are not totally independent, bipolar constructs (Tellegen, Watson, & Clark, 1999). In addition, positive and negative emotions may have different functions and consequences (Fredrickson, 2001). Similarly, burnout (an indicator of chronic not well-being) and work engagement (true well-being) have been found to be negatively associated, but also partly independent phenomena, with partially different predictors and consequences (e.g. Schaufeli, Salanova, González-Roma, & Bakker, 2002; Schaufeli & Bakker, 2004; Hakanen, Bakker, & Schaufeli, 2006). As another example, not being an optimist does not necessarily imply that one is a pessimist. Hence, investigating positive factors is expected to widen our understanding of the factors promoting well-being and other positive outcomes. In order to foster employees’ well-being and health, as well as the success of modern organizations, it is salient to widen the focus of research from risk factors and negative symptoms and consequences to what really promotes good health, motivation, long-term health, and good performance at work.

The three-year Nordic project ‘Positive factors at work’ aims to respond to the need for positive psychology in the work-life context. Our aims are: (1) to give an overview of existing Nordic projects concerning positive factors, both theoretically and methodologically; (2) to build a theoretical model to study positive factors at work; (3) to show psychometric validity of the chosen positive constructs in Nordic data sets; (4) consequently to develop a Nordic standard for investigation of positive factors in work; and (5) to carry out a pilot study in at least one of the Nordic countries based on the previous findings in the project.

This first report has focused on the first aim; we have introduced the reader to positive psychology and what positive psychology means in occupational settings and especially in the Nordic countries. In addition, we have presented altogether 14 research projects carried out or still ongoing in Denmark, Finland, Norway, and Sweden. As this report shows,

these projects have included multiples of tens of positive work-related factors, of which we have preliminarily chosen 14 for further inspection and validation in the second report.

The present working model to investigate positive factors at work is shown in Figure 2.

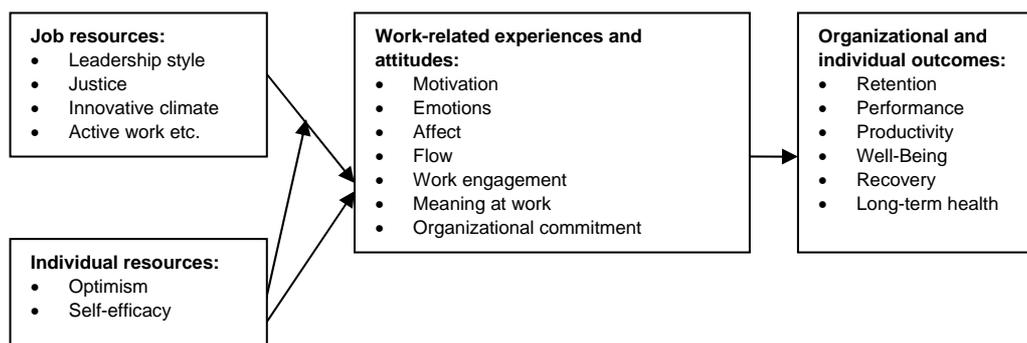


Figure 2 A preliminary model to study positive factors at work

According to our conceptualization, the positive factors include the following antecedents, mediators, and consequences: (1) *job resources*, which are organizational, social, and task-level energizing work characteristics (leadership practices and styles, innovative climate, job control, etc.); (2) *individual trait-like resources* (efficacy beliefs, optimism, etc.) which may be directly related to positive outcomes or which moderate the impact of job resources on the outcomes; (3) *work-related experiences and attitudes* (motivation, flow, work engagement, etc.); and (4) *organizational and individual outcomes* (retention, performance, well-being, long-term health, etc.).

This working model and the constructs included leave out many important positive aspects and characteristics. For example, in this project we do not tackle the positive work-home interface, nor do we present constructs such as sense of coherence (Antonovsky, 1987; Hakanen, Feldt, & Leskinen, 2007). While there can be little doubt that sense of coherence is a true positive (salutogenic) concept, it is a very well-known and validated construct in many Nordic and other studies (Eriksson & Lindström, 2005). Furthermore, we are well aware that the projects presented here are not the only Nordic projects that have included positive factors. In spite of these limitations, we hope that the present and forthcoming reports will motivate further research and practical measures to enhance positive factors and well-being within the context of work in our countries.

### 3.1 References

- Antonovsky, A. (1987). Unraveling the mystery of health: How people manage stress and stay well. San Francisco, CA: Jossey-Bass.
- Cameron, K. S., Dutton, J. E., & Quinn, R. E. (2003). Foundations of positive organizational scholarship. In Cameron, K. S., Dutton, J. E., & Quinn, R. E. (Eds.), *Positive organizational scholarship*. San Francisco, CA: Berrett-Koehler.
- Eriksson, M., & Lindström, B. (2005). Validity of Antonovsky's sense of coherence scale: A systematic review. *Journal of Epidemiology and Community Health, 59*, 460–466.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. The broaden-and-built theory of positive emotions. *American Psychologist, 56*(3), 218–226.
- Hakanen, J., Bakker, A., & Schaufeli, W. (2006). Burnout and engagement among teachers. *Journal of School Psychology, 43*, 495–513.
- Hakanen, J., Feldt, T., & Leskinen, E. (2007). Changes and stability of sense of coherence in adulthood: Longitudinal evidence from the Healthy Child Study. *Journal of Research in Personality, 41*, 602–617.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior, 23*, 695–706.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*, 56–67.
- Schaufeli, W., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement. *Journal of Organizational Behavior, 25*, 293–315.
- Schaufeli, W., Salanova, M., González-Roma, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *The Journal of Happiness Studies, 3*, 71–92.
- Tellegen, A., Watson, D., & Clark, L.-A. (1999). On the dimensional and hierarchical structure of affect. *Psychological-Science, 10*, 297–303.



# Sammendrag

Rapporten er basert på prosjektet “Positive faktorer i arbeidslivet” som er finansiert av Nordisk ministerråd. Prosjektet er et felles samarbeidsprosjekt mellom Norge (Psykologisk institutt ved Norges Teknisk- Naturvitenskapelige Universitet, NTNU og Handelshøyskolen BI, Oslo), Sverige (Psykologiska institutionen vid Stockholms universitet), Danmark (Det nasjonale forskningscenter for arbejdsmiljø, København) og Finland (The Finnish Institute of Occupational Health).

Basert på en oversikt over eksisterende data fra ulike prosjekter i de fire deltakerlandene, er hovedformålet å utvikle teori og metode for å måle positive faktorer i arbeidslivet tilpasset nordiske forhold. Prosjektet startet i 2006, og har en planlagt varighet for tre år. Denne første rapporten presenterer en oversikt over de inkluderte prosjektene som fokuserer på positive faktorer i arbeidslivet i de respektive landene. Formålet med rapporten er å gi en teoretisk og metodologisk oversikt over eksisterende nordiske prosjekter om positive faktorer og konstruere en teoretisk arbeidsmodell basert på disse funnene for videre arbeid i prosjektet.

Rapporten starter med en introduksjon av positiv psykologi hvor det gis en innføring i fagfeltet, definisjoner og en argumentasjon på hvorfor man trenger dette fagområdet. Forfatterne introduserer videre positive faktorer i arbeidslivet både fra et mikroperspektiv og et makroperspektiv. Det argumenteres med at fraværet av negative jobbkarakteristika ikke nødvendigvis fører til jobbtilfredshet og engasjement fordi disse opplevelsene også er resultat av positive erfaringer. På bakgrunn av dette er det viktig å se på positive faktorer som øker jobbtilfredshet og engasjement fordi de også er relatert til produktivitet og konsentrasjon, og også bedrer samarbeidet mellom arbeidstakere. Utgangspunktet er at positive opplevelser skal være et foretrukket område for forskere og organisasjoner som ønsker å fremme et godt og produktivt arbeidsmiljø. Dette nye og positive fokuset gir nye og interessante svar til noen av utfordringene vi står ovenfor i de Nordiske velferdslandene. Introduksjonen er fulgt av beskrivelser av de ulike prosjektene. Hver av beskrivelsene inkluderer formål med studien, design og utvalg, datainnsamling og en oversikt over de utvalgte positive faktorene som er med i studien.

Rapporten avsluttes med en konklusjon og et forslag til en teoretisk modell som er grunnlaget for den videre forskningen de neste to årene av prosjektet. Det er konkludert med at for å produsere velvære og god helse hos arbeidstakere så må fokus flyttes fra risikofaktorer og negative helse-symptomer til fokus på hva som fremmer motivasjon, velvære, langtids-friskhet og god jobbutførelse. En viktig del av konklusjonen er arbeids-

modellen som er utgangspunktet for den videre forskningen, og som inkluderer forutsetninger, mediatorer og konsekvenser.

# Tiivistelmä

Tämä raportti perustuu Pohjoismaiden Ministerineuvoston rahoittamaan "Positiiviset tekijät työssä" -projektiin. Projekti on pohjoismainen yhteishanke, johon osallistuvat Norja (Norjan tiede- ja teknologiayliopiston psykologian osasto, Norjan liiketalouden kauppakorkeakoulu), Tanska (Työelämän kansallinen tutkimuskeskus), Ruotsi (Tukholman yliopiston psykologian osasto) ja Suomi (Työterveyslaitos).

Hankkeen päätavoitteena on kehittää työn myönteisiä tekijöitä koskevia menetelmiä ja teoriaa sovellettuna pohjoismaisiin olosuhteisiin. Lähtökohtana ovat mukana olevien neljän maan eri projektien olemassa olevat tutkimusaineistot. Projekti alkoi vuonna 2006 ja sen on tarkoitus kestää kolme vuotta. Ensimmäisessä raportissa esitellään hankkeeseen valitut pohjoismaiset tutkimusprojektit, joissa on tarkasteltu työn myönteisiä tekijöitä. Raportin tavoitteena on luoda teoreettinen ja metodologinen katsaus olemassa oleviin pohjoismaisiin projekteihin myönteisistä tekijöistä työssä sekä rakentaa teoreettinen malli projektin jatkotyöskentelyä varten.

Raportin aluksi johdatellaan positiiviseen psykologiaan määrittelemällä, mitä se on ja perustelemalla, miksi sitä tarvitaan. Kirjoittajat esittelevät työn myönteisiä tekijöitä sekä mikro- että makronäkökulmista. Väitämme, ettei kielteisten ja kuormittavien työn piirteitten poissaolosta vielä välttämättä seuraa tyytyväisyyttä työhön ja työn imua, koska varsinainen työhyvinvointi on ennen kaikkea seurausta myönteisistä kokemuksista työssä. Onkin tärkeää tarkastella työn myönteisiä tekijöitä, jotka lisäävät tyytyväisyyttä työhön ja työn imua, koska ne edelleen edistävät työntekijöiden tuottavuutta, voimaantumista ja suorituskykyä sekä vahvistavat yhteistyötä työntekijöiden välillä. Lähtökohtanamme on, että työn myönteisten kokemusten ja voimavarojen tulisi olla keskeinen huomion kohde hyvää ja tuottavaa työympäristöä edistämään pyrkiville tutkijoille ja organisaatioille. Uusi ja myönteinen lähestymistapa tarjoaa kiinnostavia näkökulmia ja mahdollisuuksia myös moniin pohjoismaisiin hyvinvointivaltioita koskeviin haasteisiin.

Johdantoluvun jälkeen kuvailimme raportissa hankkeeseen valitut projektit. Jokainen projektiesittely sisältää kuvauksen tutkimuksen yleistavoitteesta, asetelmasta ja otoksesta, aineiston keruusta ja yleiskatsauksen tutkimuksessa tarkastelluista myönteisistä muuttujista.

Raportin lopuksi esittelemme tähänastiset johtopäätökset ja teoreettisen mallin, joka on perustana projektin kahden seuraavan vuoden työskentelylle. Johtopäätöksemmme on, että hyvinvoivien, terveitten ja aikaansaavien työntekijöiden varmistamiseksi huomiota on suunnattava riskitekijöistä ja kielteisistä sairausoireista myös siihen, että ymmär-

täisimme nykyistä paremmin, mikä aidosti lisää motivaatiota, hyvinvointia, pitkäaikaisterveyttä ja hyvää suoriutumista työssä. Jatkotutkimuksemme keskeisenä lähtökohtana on johtopäätelmissä esiteltävä teoreettinen malli työn myönteisistä tekijöistä, jotka voivat olla toistensa ns. syytekijöitä (esim. työn voimavarat), seurauksia (esim. pidentynyt työura) ja näitä välittäviä tekijöitä (esim. työn imu ja työhön sitoutuminen).