

TWYFORD RESEARCH: 2007

Overview of Literature on Employee “Internal” Engagement

There has been an increasing interest in employee engagement in recent years. However, much that is written is by consulting firms and is framed through a singularly US perspective. In general, these articles lack the academic rigor and practical depth to truly inform the discussion on the nature of employee engagement and the links between engagement and effectiveness.

This literature overview forms part of the theoretical basis used by the Twyford organisation to formulate their understanding and approach to internal employee engagement. This review includes more than fifty peer-reviewed journal articles that involve input from:

- more than 30 universities around the world
- over 239,000 participants in 12 countries
- almost every industry including: financial services, hospitality, research and innovation, manufacturing, retail, transport, public utilities, and government

A summary of the core ideas coming from this literature would include the following:

- there is a positive correlation between actively engaged employees and effective business outcomes (customer satisfaction, team involvement, work efficiency, future retention)
- in general, actively engaged employees manage stress better and enjoy better overall health than those who are actively disengaged (burning out).
- there is a crossover (contagion) of positive or negative dynamics between an actively engaged (or actively disengaged) employee and their work mates, clients and/or family

The Twyford organisation has combined this empirical research with 20 years of hands-on case work and analysis with more than 120 clients in five countries. As specialists in engaging people Twyford is committed to the ongoing development of sound theory and practice that can produce genuine sustainable results for their clients.

Bakker, A.B., Demerouti, E. & Schaufeli, W.B. (2005) The crossover of burnout and work engagement among working couples. *Human Relations*, 58, 661-689.

Abstract: The present study tested the hypothesis that burnout and work engagement may cross-over from husbands to wives and vice versa. Data was collected among 323 couples working in a variety of occupations. The Job Demands – Resources model was used to simultaneously examine possible correlates of burnout and engagement for each partner separately. The results of a series of hierarchical regression analyses provide evidence for the crossover of burnout (exhaustion and cynicism) and work engagement (vigor and dedication) among partners. The crossover relationships were significant and about equally strong for both partners, after controlling for important characteristics of the work and home environment. These findings expand previous crossover research, particularly by showing that positive experiences at work may be transferred to the home domain. We argue that the crossover of positive feelings among partners should be placed more prominently on the research agenda.

Bakker, A.B., Schaufeli, W.B., Demerouti, E. & Euwema, M.C. (2007). An organizational and social psychological perspective on burnout and work engagement. In M. Hewstone, H. Schut, J. de Wit, K. van den Bos & M. Stroebe (Eds.), *The scope of social psychology: Theory and applications* (pp. 229-252). Andover, UK: Psychology Press.

Abstract: This chapter aims to integrate an organizational (i.e. the Job Demands-Resources Model) with a social psychological perspective (i.e. emotional contagion and social comparison)

on the experience of burnout and work engagement. It is shown that aspects of work (cf. the organizational psychological perspective) and of individuals within groups (cf. the social psychological perspective) are both able to predict the development and sustenance of occupational well-being or unwell-being. Some studies have aimed to integrate both perspectives in the study of employee well-being, but it is argued that more systematic work should be conducted in this direction. Each of these perspectives can be enriched by the insights gained in the other perspective and their simultaneous consideration may promote a more systemic view on occupational health and well-being. This will help research and practice to find more workable solutions, which are beneficial for well-being and for all involving parties.

Bakker, A.B., Hakanen, J., Demerouti, E. & Xanthopoulou, D. (in press). Job resources boost work engagement, particularly when job demands are high. *Journal of Educational Psychology*.

Abstract: This study among 805 Finnish teachers working in elementary, secondary, and vocational schools tested two interaction hypotheses. On the basis of the Job Demands - Resources model, we predicted that job resources act as buffers and diminish the negative relationship between pupil misbehavior and work engagement. In addition, using conservation of resources theory, we hypothesized that job resources particularly influence work engagement when teachers are confronted with high levels of pupil misconduct. In line with these hypotheses, moderated structural equation modeling analyses resulted in fourteen out of eighteen possible two-way interaction effects. Particularly supervisor support, innovativeness, appreciation and organizational climate seem important job resources for teachers that help them cope with demanding interactions with students.

Bakker, A.B., Van Emmerik, H. & Euwema, M.C. (2006). Crossover of burnout and engagement in work teams. *Work and Occupations*, 33, 464-489.

Abstract: This study investigates the crossover of burnout and work engagement among 2229 Royal Dutch constabulary officers, working in one of 85 teams. We hypothesized that both states may transfer from teams to individual team members. The results of multilevel analyses confirm this crossover phenomenon by showing that team level burnout and work engagement are related to individual team members' burnout (i.e., exhaustion, cynicism and reduced professional efficacy) and work engagement (vigor, dedication, and absorption), after controlling for individual members' job demands and resources. The implications of these findings for interventions aimed at the promotion of employee well-being are discussed.

Beckers, D.G.J., Van der Linden, D., Smulders, P.G.W., Kompier, M.A.J., Van Veldhoven, J.P.M. & Van Yperen, N.W. (2004). Working overtime hours: Relations with fatigue, work motivation, and the quality of work. *Journal of Occupational and Environmental Medicine*, 46, 1282-1289.

Abstract: Objectives: We sought to better understand the relationship between overtime and mental fatigue by taking into account work motivation ('engagement') and the quality of overtime work and studying theoretically derived subgroups. Methods: We conducted a survey-study among a representative sample of the Dutch full-time workforce (N = 1,807). The prevalence of overtime work and the associations between overtime and job demands, job variety, decision latitude, fatigue, and work motivation ('engagement') was studied through descriptive statistics. We used MANCOVA (covariates: age, gender, salary level) to compare six overtime-fatigue subgroups with respect to work motivation ('engagement') and job characteristics. Results: A total of 67% of the respondents worked overtime (mean, 3.5 hours). Overtime workers appeared to be non-fatigued, motivated ('engaged') workers with favorable work characteristics. MANCOVA revealed no significant overtime-fatigue interaction. Conclusions: Moderate overtime is common among Dutch workers, who seem to be happy workers with attractive jobs rather than fatigued employees.

Cabrera, A., Collins, W., and Salgado, J., (2006) Determinants of individual engagement in knowledge sharing, *International journal of human resource management* 17 (2) 245-264

Abstract: Knowledge management systems try to elicit and support the flow of ideas and experiences among groups of employees (sometimes referred to as knowledge communities). Whereas numerous information and communication systems have been developed to support

such knowledge exchanges, practical applications have found that technology alone cannot ensure that knowledge will indeed be volunteered and exchanged, and whereas researchers and consultants alike have argued that culture and other human variables constitute key success factors, it is not clear what specific variables are at play, nor what management practices can affect those variables. This exploratory research investigates some of the psychological, organizational and system-related variables that may determine individual engagement in intra-organizational knowledge sharing. Results from a survey of 372 employees from a large multinational show that self-efficacy, openness to experience, perceived support from colleagues and supervisors and, to a lesser extent, organizational commitment, job autonomy, perceptions about the availability and quality of knowledge management systems, and perceptions of rewards associated with sharing knowledge, significantly predicted self-reports of participation in knowledge exchange.

Demerouti, E., Bakker, A.B., Janssen, P.P.M. & Schaufeli, W.B. (2001). Burnout and engagement at work as a function of demands and control. *Scandinavian Journal of Work, Environment & Health*, 27, 279-286.

Abstract: The present study among 381 employees from an insurance company used discriminant analyses techniques to examine the relationship between job demands and job control on the one hand, and health impairment and motivation on the other. Results showed that the amount of demands and control could be predicted on the basis of employees' experience of health impairment (burnout and health complaints) and motivation (engagement and commitment). Each of the four combinations of demands and control differentially affected the experience of strain or motivation. Job demands were most clearly related to health impairment, whereas job control was most clearly related to motivation. These findings partly contradict the demand-control model, but are consistent with the recently proposed job demands – resources model.

Durán, A., Extremera, N. & Rey, L. (2004). Engagement and burnout: Analyzing their association patterns. *Psychological Reports*, 94, 1084-1050.

Abstract: This study explored the negative patterns of associations between Emotional Exhaustion and Depersonalization with the dimensions of Engagement, while it was hypothesized a positive link with Personal Accomplishment. The sample was composed by 112 Spanish human services professionals who work with mentally retarded people. The analysis showed moderate negative correlations among scores on Emotional Exhaustion and on all three Engagement scales (-.55 for Vigor; -.41 for Dedication; -.24 for Absorption), positive correlations among scores on Personal Accomplishment and Engagement dimensions (Vigor .57; Dedication .54; Absorption .50), and only significant correlations between scores on Depersonalization and Vigor (-.39) and on Dedication (-.22). The data obtained using the Maslach Burnout Inventory-Human Services Survey did not support the hypothesis of stronger negative correlations between the measures, Emotional Exhaustion-Vigor and Depersonalization-Dedication, hypothesized in the conceptual model by Schaufeli, Salanova, González-Romá and Bakker.

Durán, A., Extremera, N. & Rey, L. (2004). Self-reported emotional intelligence, burnout and engagement among staff in services for people with intellectual disabilities. *Psychological Reports*, 92, 386-390.

Abstract: This study examined the relationship among dimensions of self-reported emotional intelligence, engagement and burnout, using the Trait-Meta Mood Scale, Maslach Burnout Inventory and Utrecht Work Engagement Scale in a sample of Spanish professional who work at institutions for people with intellectual disabilities. The results showed that Emotional Clarity was significantly correlated with all Engagement dimensions (.20 Vigor, .30 Dedication, .36 Absorption) and with Personal Accomplishment (.32). These findings extend previous research with college students in which Clarity and Repair to moods subscales were relevant predictors of well-being indexes and interpersonal functioning and suggest that Trait-Meta Mood Scale subscales also show significant relationships with emotional functioning and work related variables in a professional sample.

González-Romá, V., Schaufeli, W.B., Bakker, A. & Lloret, S. (2006). Burnout and engagement: Independent factors or opposite poles? *Journal of Vocational Behavior*, 68, 165-174.

Abstract: Burnout researchers have proposed that the conceptual opposites of emotional exhaustion and cynicism (the core dimensions of burnout) are vigor and dedication (the core dimensions of engagement), respectively (Maslach & Leiter, 1997; Schaufeli et al., 2002). We tested this proposition by ascertaining whether two sets exhaustion-vigor and cynicism-dedication items were scalable on two distinct underlying bipolar dimensions (i. e., energy and identification, respectively). The results obtained by means of the non-parametric Mokken scaling method in three different samples (Ns = 477, 507, and 381) supported our proposition: the core burnout and engagement dimensions can be seen as each others opposites along two distinct bipolar dimensions dubbed energy and identification.

Gorter, R.C., te Brake, J.H.M., Hoogstraten J. & Eijkman M.A.J. (in press). Positive engagement and job resources in dental practice. Community Dentistry & Oral Epidemiology.

Abstract: The aim of this study is to determine the level of engagement among dentists, and subsequently, to investigate which dental job resources are positively correlated with engagement. By stratifying on gender, age, and region, a representative sample of 848 general dental practitioners was drawn at random, plus an extra group of 95 female dentists for gender comparison purposes. Engagement was assessed using the Utrecht Work Engagement Scale (UWES), consisting of three subscales: Vigor, Dedication; and Absorption. Job resources were measured using the Dentists' Experienced Job Resources Scale (DEJRS). 632 dentists (67%) responded, 76% male and 25% female. Mean age: 44.6 years (SD = 9.0). Dedication and Absorption mean scores were higher among dentists when compared with manual norm scores - based upon a variety of professions - whereas Vigor mean scores were comparable to manual norm scores. All DEJRS subscales and the full scale showed statistically significant positive correlations with the UWES subscales. Conclusion: Dentists showed relatively high mean scores on an engagement measure when compared with manual norm scores. No gender differences in mean scores were found. Job resources most valued were "Immediate results / Aesthetics". The job resources "Idealism / Pride" and "Patient care" showed most predictive value with regard to engagement among dentists. In order to prevent burnout, it is recommended to raise dentists' awareness of the importance to create sufficient time and space for stimulating aspects in their work.

Hakanen, 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, 497-487.

Abstract: This study focuses on job demands, job resources, and work engagement among 1919 Finnish dentists employed in the public sector. Based on the Job Demands - Resources model, it was first predicted that the inverse relationship between job demands (e.g. workload, physical environment) and work engagement would be weaker when dentists have many resources (e.g. variability in the required professional skills, peer contacts). Second, using conservation of resources theory it was hypothesized that job resources are most beneficial in maintaining work engagement under conditions of high job demands. The data were based on a postal questionnaire with a response rate of 71%. The dentists were split in two random groups in order to cross-validate the results. A set of hierarchical regression analyses resulted in 17 out of 40 significant interactions (40%). Four out of 20 possible interaction effects could be cross-validated showing e.g., that variability in professional skills mitigated the negative effect of qualitative workload on work engagement, and in addition, boosted work engagement when qualitative workload was high. The main conclusion is that job resources are useful in coping with the high demands in dentistry and help dentists stay engaged.

Hakanen, J.J., Bakker, A.B. & Schaufeli, W. .B. (2006). Burnout and work engagement among teachers. Journal of School Psychology, 43, 495-513.

Abstract: The Job Demands-Resources Model was used as the basis of the proposal that there are two parallel processes involved in work-related well-being among teachers, namely an energetical process (i.e., job demands/burnout/ill health) and a motivational process (i.e., job resources, engagement, organizational commitment). In addition, some cross-links between both processes were hypothesized. Structural equation modeling was used to simultaneously test the hypotheses in a sample of Finnish teachers (N =2038). The results confirmed the existence of both

processes, although the energetical process seems to be more prominent. More specifically, (1) burnout mediated the effect of high job demands on ill health, (2) work engagement mediated the effects of job resources on organizational commitment, and (3) burnout mediated the effects of lacking resources on poor engagement. The robustness of these findings is underscored by the fact that they were obtained in one half of the sample (using random selection) and cross-validated in the other half.

Hallberg, U., Schaufeli, W.B. & Johansson, G. (2007). Type A behaviour and work situation: Associations with burnout and work engagement. *Scandinavian Journal of Psychology* 48, 135-142.

Abstract: In research on burnout, and – more recently – work engagement, studies on organizational predictors outweigh studies on individual contributors. The objective of the present study was to investigate the effects of individual ('Type A') behavior patterns on burnout and work engagement. Building on the Job Demand-Resource (JR-R) model, we proposed that the first component of Type A behavior – achievement striving – would be related to work engagement and the second component – irritability/impatience – to burnout. We also investigated if interactions between individual behavior patterns and work characteristics (demands and resources) would affect outcomes. Hierarchical regressions in a sample of Information and Communication Technology (ICT) and management consultants (N=329) mainly supported our propositions, implying that the principles of the JD-R model also apply to individual dispositions.

Hallberg, U., & Schaufeli, W.B. (2006). "Same same" but different: Can work engagement be discriminated from job involvement and organizational commitment? *European Journal of Psychology*, 11, 119-127.

Abstract: The aim of the present study was to investigate whether work engagement (measured by the Utrecht Work Engagement Scale; UWES) could be empirically separated from job involvement and organizational commitment. In addition, psychometric properties of the Swedish UWES were investigated. Discriminant validity of the UWES was tested through inspection of latent inter-correlations between the constructs, confirmatory factor analyses, and patterns of correlations with other constructs (health complaints, job- and personal factors, and turnover intention) in a sample of Information Communication Technology-consultants (N=186). Conclusion: work engagement, job involvement and organizational commitment are empirically distinct constructs and thus reflect different aspects of work attachment. The internal consistency of the Swedish UWES was satisfactory, but the dimensionality was somewhat unclear.

Harter, J.K., Schmidt, F.L. & Hayes, T.L. (2002). Business-unit-level relationships between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87, 268-279.

Abstract: Based on 7,939 business units in 36 companies, this study used meta-analysis to examine the relationship at the business-unit level between employee satisfaction – engagement and the business-unit outcomes of customer satisfaction, productivity, profit, employee turnover, and accidents. Generalizable relationships large enough to have substantial practical value were found between unit-level employee satisfaction – engagement and these business-unit outcomes. One implication is that changes in management practices that increase employee satisfaction may increase business-unit outcomes, including profit.

Heuven, E., Bakker, A.B., Schaufeli, W.B., & Huisman, N. (2006). The role of self-efficacy in performing emotion work. *Journal of Vocational Behavior*, 69, 222-235.

Abstract: This study used a sample of 154 cabin attendants to examine the role of self-efficacy in the performance of emotion work. On the basis of the literature, we hypothesized that self-efficacy would have a moderating influence on the relationship between emotional job demands (i.e. feeling rules and emotionally charged interactions with passengers) and emotional dissonance, and on the relationship between emotional dissonance and well-being (emotional exhaustion and work engagement). In addition, we predicted that emotional dissonance mediates the relationship between emotional job demands and well-being. The results of a series

of hierarchical multiple regression analyses generally supported these hypotheses. Results confirmed that emotionally charged interactions with passengers are related to emotional exhaustion and engagement through their influence on emotional dissonance. Furthermore, self-efficacy buffers the relationship between emotional job demands and emotional dissonance, and the relationship between emotional dissonance and work engagement (but not exhaustion).

Jackson, L.T.B., Rothman, S.R. & Van de Vijver, F.J.R. (2006). A model of work related well-being for educators in South-Africa. *Stress & Health*, 22, 263-274.

Abstract: The aims of this study were to assess the validity and internal consistency of constructs in a model of work-related well-being and to test a structural model of their relationships. The Maslach Burnout Inventory – General Survey, Utrecht Work Engagement Scale, a Job Demands-Resources Scale, a Health Questionnaire, and an Organizational Commitment Scale were administered to a stratified random sample of 1177 educators in North-west Province (South Africa). A good fit was found for a model in which burnout (exhaustion and mental distance) mediated the relationship between job resources and organizational commitment. Job resources contributes strongly to low burnout and high work engagement. These results suggest that both positive and negative aspects of work-related well-being (i.e. burnout and work engagement) can be integrated into one model.

Kahn, W., (1990) Psychological conditions of personal engagement and disengagement at work, *Academy of management journal*, 33 (4) 692-727

Abstract: This study began with the premise that people can use varying degrees of their selves, physically, cognitively, and emotionally, in work role performances, which has implications for both their work and experiences. Two qualitative, theory-generating studies of summer camp counselors and members of an architecture firm were conducted to explore the conditions at work in which people personally engage, or express and employ their personal selves, and disengage, or withdraw and defend their personal selves. This article describes and illustrates three psychological conditions—meaningfulness, safety, and availability — and their individual and contextual sources. These psychological conditions are linked to existing theoretical concepts, and directions for future research are described.

Kahn, W., (1992) To be fully there: psychological presence at work, *Human relations*, 45 (4) 327-349

Abstract: This article develops the concept of psychological presence to describe the experiential state enabling organisation members to draw deeply on their personal selves in role performances, i.e., express thoughts and feelings, question assumptions, innovate. The dimensions of psychological presence are described along with relevant organisational and individual factors. The concept's implications for theory and research about the person-role relationship are described.

Koyuncu, M., Burke, R.J. & Fiksenbaum, L. (2006). Work engagement among women managers and professionals in a Turkish bank: Potential antecedents and consequences. *Equal Opportunities International*, 25, 299-310.

Abstract: This research examined potential antecedents and consequences of work engagement in a sample of women managers and professionals employed by a large Turkish bank. Data were collected from 286 women, a seventy-two percent response rate, using anonymously completed questionnaires. Engagement was assessed by three scales developed by Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002); Vigor, Dedication and Absorption. Antecedents included personal demographic and work situation characteristics as well as work life experiences; consequences included measures of work satisfaction and psychological well-being. The following results were observed. First, worklife experiences, particularly, Control, Rewards and Recognition and Value fit, were found to predict all three engagement measures. Second, engagement, particularly Dedication, predicted various work outcomes (e.g., job satisfaction, intent to quit). Third, Engagement, particularly vigor, predicted various psychological well-being outcomes. Questions of causality cannot be addressed since data were collected at only one point in time. Longitudinal studies are needed to determine the effects of work life

experiences on engagement. Implications – Organizations can increase levels of work engagement by creating work experiences (e.g., control, rewards and recognition) consistent with effective human resource management practices.

Langelaan, S., Bakker, A.B., Van Doornen, L.J.P. & Schaufeli, W.B. (2006). Burnout and work engagement: Do individual differences make a difference? *Personality and Individual Differences*, 40, 521-532.

Abstract: The central aim of the present study among 572 Dutch employees was to examine whether burnout and its positive antipode – work engagement – could be differentiated on the basis of personality and temperament. We expected burnout to be characterized by high neuroticism and low extraversion, and engagement by low neuroticism and high extraversion. Additionally, we predicted that burnout would correlate negatively with the temperamental traits (strength of excitation, strength of inhibition, and mobility), whereas work engagement would correlate positively. Discriminant analysis was used to distinguish burned-out and engaged employees from their non-burned-out and non-engaged counterparts, respectively. Results showed that high neuroticism is the core characteristic of burnout, whereas work engagement is characterized by low neuroticism in combination with high extraversion and high levels of mobility. Thus, personality and temperament make a difference as far as burnout and work engagement are concerned.

Langelaan, S., Bakker, A.B., Schaufeli, W.B., Van Rhenen & Van Doornen, L.J.P. (2006). Do burned-out and engaged employees differ in HPA-axis functioning? *Scandinavian Journal of Work Environment and Health*, 32, 339-348.

Abstract: Objectives: The central aim of the present study was to examine differences in Hypothalamic-Pituitary-Adrenal (HPA) axis functioning between 29 burned-out, 33 engaged and 26 healthy reference managers, as identified with the Maslach Burnout Inventory – General Survey (MBI-GS) and the Utrecht Work Engagement Scale (UWES). Methods: All managers were employed at a large Dutch telecom company. Salivary cortisol was sampled on three consecutive workdays and one non-workday to determine the cortisol awakening response (CAR). Salivary dehydroepiandrosterone-sulfate (DHEAS), a cortisol counterbalancing product of the HPA-axis, was measured on these days at one hour after awakening. The Dexamethasone Suppression Test (DST) was used to investigate the feedback sensitivity of the HPA-axis. Results: Morning cortisol levels were higher on workdays than on the non-workday, but this effect did not differ between the three groups. The burned-out, engaged and reference group did not differ either in cortisol and DHEAS levels, slope of the CAR, and cortisol/DHEAS ratio. The engaged group showed a stronger cortisol suppression in response to the DST than the two other groups, suggesting higher feedback sensitivity among engaged managers. Conclusion: Burned-out and engaged managers only differ marginally in HPA-axis functioning.

Laschinger, H., and Leiter, M., (2006) The impact of nursing work environments on patient safety outcomes the mediating role of burnout/engagement, *The journal of nursing administration*, 36 (5) 259-267

Abstract: Objective: To test a theoretical model of professional nurse work environments linking conditions for professional nursing practice to burnout and, subsequently, patient safety outcomes. Background: The 2004 Institute of Medicine report raised serious concerns about the impact of hospital restructuring on nursing work environments and patient safety outcomes. Few studies have used a theoretical framework to study the nature of the relationships between nursing work environments and patient safety outcomes. Methods: Hospital-based nurses in Canada (N = 8,597) completed measures of worklife (Practice Environment Scale of the Nursing Work Index), burnout (Maslach Burnout Inventory-Human Service Scale), and their report of frequency of adverse patient events. Results: Structural equation modeling analysis supported an extension of Leiter and Laschinger's NursingWorklife Model. Nursing leadership played a fundamental role in the quality of worklife regarding policy involvement, staffing levels, support for a nursing model of care (vs medical), and nurse/physician relationships. Staffing adequacy directly affected emotional exhaustion, and use of a nursing model of care had a direct effect on nurses' personal accomplishment. Both directly affected patient safety outcomes. Conclusions: The results suggest that patient safety outcomes are related to the quality of the nursing practice work environment and nursing leadership's role in changing the work

environment to decrease nurse burnout.

Leiter, M., Day, A., and Harvie, P., and Shaughnessy, K., (2007) Personal and organizational knowledge transfer: Implications for worklife engagement, *Human relations*, 60 (2), 259–283

Abstract: Although knowledge transfer (KT) in healthcare organizations is increasingly important, models have typically focused on the transfer of clinical knowledge. Despite numerous reports and studies on worklife issues for healthcare professionals, few recommendations have been implemented, and many of these professionals are unfamiliar with the reports. Using measures of knowledge transfer of quality of worklife information developed from a model of transfer of clinical knowledge, we tested the relationship between individual and organizational knowledge transfer among 769 nurses in hospitals across four provinces in Canada. We also examined a model that integrated these two knowledge transfer measures with burnout/engagement in the workplace. Our data supported a twofactor structure for the measure of knowledge transfer involving a) individual perceptions of personal knowledge transfer activities and b) organizations' support for knowledge transfer. Data from structural equation modeling demonstrated the importance of knowledge transfer pertaining to quality of worklife to nurses' experience of energy, involvement, and efficacy that underlies the burnout/engagement construct.

Llorens, S., Salanova, M., Bakker, A. & Schaufeli, W.B. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior*, 23, 825-841.

Abstract: The present study among 110 Spanish university students expands previous research on work engagement by investigating the causal relationships between two potentially important resources in the use of Information and Communication Technology (i.e., time control and method control), efficacy beliefs and engagement. More specifically, two questions are addressed: (1) do personal resources mediate the relationship between task resources and work engagement?; (2) does engagement increase personal and task resources? Results show that efficacy beliefs play a mediating role between task resources and engagement. Engagement increases efficacy beliefs, which, in turn, increase task resources over time. These findings suggest a positive gain spiral in which efficacy beliefs play a central role.

Llorens, S., Bakker, A.B., Schaufeli, W.B. & Salanova, M. (2006). Testing the robustness of the Job Demands-resources model. *International Journal of Stress Management*, 13, 378-391.

Abstract: According to the Job Demands-Resources (JD-R) model, job demands and resources evoke two relatively independent processes: a health impairment process and a motivational process, respectively. This hypothesis was tested in two field studies among 654 Spanish and 477 Dutch employees working with ICT. Results of SEM analyses provided partial evidence for the JD-R model. In both countries, job demands were important predictors of burnout, whereas job resources were the most important predictors of work engagement. In their turn, burnout and engagement both explained unique variance in organizational commitment. However, unexpectedly, job resources were also negatively related to burnout. Furthermore, multi-group analyses showed that these structural paths were invariant over countries, although the strength of the relationships differed significantly between Spain and The Netherlands. The theoretical and practical implications, as well as perspectives for future research are discussed.

Maslach, C., Schaufeli, W., Leiter, M., (2001) Job burnout. *Annual review of psychology*, 52, 397-422

Abstract: Burnout is a prolonged response to chronic emotional and interpersonal stressors on the job, and is defined by the three dimensions of exhaustion, cynicism, and inefficacy. The past 25 years of research has established the complexity of the construct, and places the individual stress experience within a larger organizational context of people's relation to their work. Recently, the work on burnout has expanded internationally and has led to new conceptual models. The focus on engagement, the positive antithesis of burnout, promises to yield new perspectives on interventions to alleviate burnout. The social focus of burnout, the solid research basis concerning the syndrome, and its specific ties to the work domain make a distinct and valuable contribution to people's health and well-being.

Mauno, Kinnunen, U. & Ruokolainen, M. (2007). Job demands and resources as antecedents of work engagement: A longitudinal study. *Journal of Organizational Behavior*, 70, 149-171.

Abstract: By utilizing a 2-year longitudinal design, the present study investigated the experience of work engagement and its antecedents among Finnish health care personnel (n=409). The data were collected by questionnaires in 2003 (Time 1) and in 2005 (Time 2). The study showed that work engagement—especially vigor and dedication—was relatively frequently experienced among the participants, and its average level did not change across the follow-up period. In addition, the experience of work engagement turned out to be reasonably stable during the 2-year period. Job resources predicted work engagement better than job demands. Job control and organization-based self-esteem proved to be the best lagged predictors of the three dimensions of work engagement. However, only the positive effect of job control on dedication remained statistically significant after controlling for the baseline level of work engagement (Time 1).

May, D.R., Gilson, R.L. & Harter, L.M. (2004). The psychological conditions of meaningfulness, safety and availability and the engagement of the human spirit at work. *Journal of Occupational and Organizational Psychology*, 77, 11-37.

Abstract: Building on Kahn's (1990) ethnographic work, a field study in a U.S. Midwestern insurance company explored the determinants and mediating effects of three psychological conditions – meaningfulness, safety and availability – on employees' engagement in their work. Results from the revised theoretical framework revealed that all three psychological conditions exhibited significant positive relations with engagement. Meaningfulness displayed the strongest relation. Job enrichment and role fit were positively linked to psychological meaningfulness. Rewarding co-worker and supportive supervisor relations were positively associated with psychological safety, whereas adherence to co-worker norms and self-consciousness were negatively associated. Psychological availability was positively related to resources available and negatively related to participation in outside activities. Finally, relations of job enrichment and work role fit with engagement were partially mediated by psychological safety.

Montgomery, A., Peeters, M.C.W., Schaufeli, W.B. & Den Ouden, M. (2003). Work-home interference among newspaper managers: Its relationship with burnout and engagement. *Anxiety, Stress & Coping*, 16, 195-211.

Abstract: Managers are increasingly concerned about managing the conflicts experienced in fulfilling the responsibilities of work and family. The problem of balancing these domains arises from work to home interference, which reflects a mutual incompatibility between the demands of the work role and the demands of the home life. The central idea underlying the theoretical model of this study, is that work and home demands lead to work strain and decreased feelings of engagement, while work and home resources lead to increased feelings of engagement and reduced burnout. Work to home interference mediates these relationships. An innovation of the present study was to assess both home demands and positive aspects of work to home interference. Data were collected from 69 newspaper managers. Results indicated that negative interference mediated between demands and outcomes, and positive interference mediated between resources and outcomes. This study highlights the importance of measuring positive concepts in terms of constructing a more balanced picture of work and home interference.

Richardson, A.M., Burke, R.J. & Martinussen, M. (2006). Work and health outcomes among police officers: The mediating role of police cynicism and engagement. *International Journal of Stress Management*, 13, 555-574.

Abstract: This study examined the relationship between personality variables (Type A), job demands and job resources, and police cynicism and engagement and also examined the mediating role of cynicism and work engagement in prediction both work and health related outcomes among police officers. The participants were 150 Norwegian police officers, and data were collected using questionnaires. Results showed that Type A behavior was related to both cynicism and engagement. As predicted, both job demands and lack of job resources were related to cynicism, and job resources were positively related to engagement. A series of regression analyses indicated direct relationships between Type A behavior, job demands and

health complaints with no mediating effect if cynicism. Work engagement particularly mediated the effects of individual characteristics, job demands and resources on organizational commitment and self-efficacy. However, direct links between demands and resources and organizational commitment were also found, as well as direct links between Type A behavior, work demands and self-efficacy.

Rothbard, N., (2001) Enriching or depleting? The dynamics of engagement at work and family roles, *Administrative science quarterly*, 46, 655-684

Abstract: This study develops a model of engagement in the multiple roles of work and family. Two competing arguments are examined about the effects of engaging in multiple roles, depletion and enrichment, and integrate them by identifying the type of emotional response to a role, negative or positive, as a critical contrasting assumption held by these two perspectives. Moreover, depletion and enrichment are represented as complex multistep processes that include multiple constructs such as engagement and emotion. This study jointly examines both the depleting and enriching processes that link engagement in one role to engagement in another, using structural equation modelling. Findings from a survey of 790 employees reveal evidence for both depletion and enrichment as well as gender differences. Specifically, depletion existed only for women and only in the work-to-family direction. Men experienced enrichment from work to family, while women experienced enrichment from family to work. Overall, more linkages were found between work and family for women than for men.

Rothman, I. (2003). Burnout and engagement: A South African Perspective. *South African Journal of Industrial Psychology*, 29, 16-25.

Abstract: Work wellness, and more specifically burnout and engagement are important areas of research and intervention in South Africa. However, few studies have been conducted regarding the factorial validity, construct validity and item bias of measuring instruments of burnout and work engagement. Furthermore, few studies have been conducted regarding causal models of burnout as well as interventions to prevent and/or manage burnout in a multicultural context. Little is known about the causes of work engagement and interventions to increase it. Research should be conducted to validate measuring instruments of burnout, work engagement and predictors thereof in multicultural contexts. Research is also needed regarding the effectiveness of interventions to manage work engagement and to prevent and/or manage burnout.

Saks, A.M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, 27, 600-619.

Abstract: A survey was completed by 102 employees (60% female, average age 34, average work experience 12 years) working in a variety of jobs and organizations. Results indicate that there is a meaningful difference between job and organization engagements and that perceived organizational support predicts both job and organization engagement; job characteristics predicts job engagement; and procedural justice predicts organizational engagement. In addition, job and organizational engagement mediated the relationships between the antecedents and job satisfaction, organizational commitment, intentions to quit, and organizational citizenship behavior. This was the first study to make the distinction between job and organization commitment and to measure a variety of antecedents and consequences of job and organizational engagement.

Salanova, M., Agut, S. & Peiró, J.M. (2005). Linking organizational resources and work engagement to employee performance and customer loyalty: The mediation of service climate. *Journal of Applied Psychology*, 90, 1217-1227.

Abstract: This study examines the mediating role of service climate in the prediction of employee performance and customer loyalty. Contact employees (N=342) from 114 service units (58 hotel receptions and 56 restaurants) provided information about organizational resources, engagement and service climate. Furthermore, customers (N=1,140) from these units informed on employee performance and customer loyalty. Structural Equation Modeling is consistent with a full mediation model in which organizational resources and work engagement predicted service climate, which in turn predicted employee performance and then to customer loyalty. Further

analyses revealed a potential reciprocal effect between service climate and customer loyalty. Finally, implications from the study are discussed together with limitations and suggestions for future research.

Salanova, M., Bakker, A.B. & Llorens, S. (2006). Flow at work: Evidence for an upward spiral of personal and organizational resources. *Journal of Happiness Studies*, 7, 1-22.

Abstract: The present 2-wave study among 258 secondary school teachers investigates the relationships between personal and organizational resources on the one hand, and work-related flow on the other hand. On the basis of Hobfoll's (1988) Conservation of Resources Theory, Bandura's (1997) Social Cognitive Theory and Frederickson's (1998) "broaden and build" theory of positive emotions, we formulated two hypotheses: (1) personal resources (i.e. efficacy beliefs) and organizational resources (i.e. social support climate and clear work goals) facilitate work related flow (work absorption, work enjoyment, and intrinsic work motivation); and (2) work-related flow has a positive influence on personal and organizational resources. The results of a series of structural equation modeling analyses offer clear support for both hypotheses.

Salanova, M, Llorens, S., Cifre, E., Martínez, I & Schaufeli, W.B. (2003). Perceived collective efficacy, subjective well-being and task performance among electronic work groups: An experimental study. *Small Groups Research*, 34, 43-73.

Abstract: This study investigates the effects of e-groups on well-being and performance, using a collective approach and an objective performance indicator. Furthermore, it includes collective efficacy as a moderator, and negative (anxiety) as well as positive (engagement) well-being. A lab experiment with an interval of two weeks was performed among 143 students, who were randomly distributed across 18 groups using a chat-internet program and 10 groups working face-to-face. Half of the groups performed under time pressure. Results confirm the moderating role of perceived collective efficacy on well-being and task performance. All groups working under time pressure and low in collective efficacy, show an increase in collective anxiety. Chat-internet groups under time pressure show an increase in collective engagement, but only when they feel high in collective efficacy. Finally, task performance was poorer in chat-groups, working under time pressure and with low levels of collective efficacy, than in the other groups.

Salanova, M., & Schaufeli, W.B. (in press). Job resources, engagement and proactive behavior: A cross-national study. *International Journal of Human Resources Management*.

Abstract: This study investigates the mediating role of work engagement (i.e., vigor and dedication) among job resources (i.e., job control, feedback and variety) and proactive behavior at work. This mediating role was investigated, using Structural Equation Modeling in two independent samples from Spain (n= 386 technology employees) and The Netherlands (n= 338 telecom managers). Results in both samples confirmed that work engagement fully mediates the impact of job resources on proactive behavior. Subsequent multi-group analyses revealed that the strengths of the structural paths were invariant across both national samples. Theoretical and practical implications for Human Resources Management are discussed.

Schaufeli, W.B. & Bakker, A.B. (2004). Job demands, job resources and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293-315.

Abstract: This study focuses on burnout and its positive antipode — engagement. A model is tested in which burnout and engagement have different predictors and different possible consequences. Structural equation modeling was used to simultaneously analyze data from four independent occupational samples (total N = 1698). Results confirm the hypothesized model indicating that: (1) burnout and engagement are negatively related, sharing between 10 per cent and 25 per cent of their variances; (2) burnout is mainly predicted by job demands but also by lack of job resources, whereas engagement is exclusively predicted by available job resources; (3) burnout is related to health problems as well as to turnover intention, whereas engagement is related only to the latter; (4) burnout mediates the relationship between job demands and health problems, whereas engagement mediates the relationship between job resources and turnover intention. The fact that burnout and engagement exhibit different patterns of possible causes and consequences implies that different intervention strategies should

be used when burnout is to be reduced or engagement is to be enhanced.

Schaufeli, W.B., Bakker, A.B. & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701-716.

Abstract: This article reports on the development and psychometric properties of a short self-report questionnaire to measure work engagement – a positive, work-related state of fulfilment that is characterized by vigor, dedication, and absorption. Data was collected in 27 studies carried out in ten different countries (total N = 14,521). Results indicate that the original 17-item Utrecht Work Engagement Scale (UWES) can be reduced to a nine-item short version. In addition, the results of covariance structure modeling show that compared to the one-factor model a three-factor model distinguishing between vigor, dedication, and absorption fits slightly better to the data of employees in a wide range of occupations across countries. Furthermore, the subscales of the UWES-9 have good internal consistencies and test-retest reliabilities. The relationship between work engagement and its presumed opposite, burnout, was also explored. Results of a second-order factor analysis show that a two-factor model with a reduced burnout factor (including exhaustion and cynicism) and an expanded engagement factor (including vigor, dedication, absorption, and professional efficacy) fits best to the data. It is concluded that the UWES-9 has acceptable psychometric properties, and can be used in studies on positive organizational behavior.

Schaufeli, W.B., Martínez, I., Marques Pinto, A. Salanova, M. & Bakker, A.B. (2002). Burnout and engagement in university students: A cross national study. *Journal of Cross-Cultural Psychology*, 33, 464-481.

Abstract: This study examines burnout and engagement -- the hypothesized 'opposite' of burnout -- in university students from Spain (N = 623), Portugal (N = 727), and The Netherlands (N = 311). Confirmatory factor-analyses showed that the expected three-factor structures of the adapted versions of the Maslach Burnout Inventory (MBI) for students (including Exhaustion, Cynicism, and Reduced Efficacy) and the Utrecht Work Engagement Scale (UWES) for students (including Vigor, Dedication, and Absorption) fitted to the data of each sample. However, a rigorous test revealed that most factor loadings of the MBI were not invariant across all samples. Results with the UWES were slightly better indicating invariance of factor loadings of Absorption in all samples and of Vigor in two of the three samples. Furthermore, as hypothesized, the burnout and engagement subscales were negatively correlated. Finally, irrespective of country, Efficacy and Vigor were positively related to academic performance; i.e. the number of passed exams relative to the total number of exams in the previous term.

Schaufeli, W., & Salanova, M., (2007) Efficacy or inefficacy, that's the question: Burnout and work engagement, and their relationships with efficacy, Anxiety, Stress and Coping, 20(2): 177-196

Abstract: Challenges the traditional view that lack of efficacy measured with the corresponding reversed efficacy scale (Maslach Burnout Inventory, MBI) is a burnout dimension. Instead, we claim that in addition to exhaustion and cynicism, in efficacy measured with a newly developed scale characterizes burnout. MBI-efficacy is apparently related to work engagement, considered as the positive antithesis of burnout. We performed Structural Equation Modeling in two samples of Spanish expectations were largely confirmed: (1) compared with efficacy beliefs in efficacy beliefs relate more strongly to the other two burnout components; (2) the alternative three-factor burnout model including in efficacy fits better to the data than the traditional model including efficacy; (3) a model with in efficacy loading on burnout and efficacy loading on engagement fits the data. It is suggested that an in efficacy scale rather than a reversed efficacy scale should be used to assess burnout in future studies.

Schaufeli, W.B., Salanova, M., Gonzalez-Romá, V. & Bakker, A.B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3, 71-92.

Abstract: This study examines the factorial structure of a new instrument to measure engagement, the hypothesized 'opposite' of burnout in a sample of university students (N=314) and employees

(N=619). In addition, the factorial structure of the Maslach Burnout Inventory – General Survey (MBI-GS) is assessed and the relationship between engagement and burnout is examined. Simultaneous confirmatory factor-analyses in both samples confirmed the original three-factor structure of the MBI-GS (exhaustion, cynicism, and professional efficacy) as well as the hypothesized three-factor structure of engagement (vigor, dedication, and absorption). Contrary to expectations, a model with two higher-order factors – 'burnout' and 'engagement' – did not show a superior fit to the data. Instead, our analyses revealed an alternative model with two latent factors including: (1) exhaustion and cynicism ('core of burnout'); (2) all three engagement scales plus efficacy. Both latent factors are negatively related and share between 22% and 62% of their variances in both samples. Despite the fact that slightly different versions of the MBI-GS and the engagement questionnaire had to be used in both samples the results were remarkably similar across samples, which illustrates the robustness of our findings.

Schaufeli, W.B., Taris, T.W., & Van Rhenen, W. (2007). Workaholism, burnout and engagement: Three of a kind or three different kinds of employee well-being? *Applied Psychology: An International Review*.

Abstract: The present study investigated in a sample of 587 telecom managers whether workaholism, burnout, and work engagement – the supposed antipode of burnout – can be distinguished empirically. These three concepts were measured with existing, validated multi-dimensional questionnaires. Structural equation modeling revealed that a slightly modified version of the hypothesized model that assumed three distinct yet correlated constructs – burnout, engagement and workaholism – fitted the data best. Correlational and multiple regression analyses revealed that these three concepts retained unique hypothesized patterns of relationships with variables from five clusters representing (1) long working hours, (2) quality of social relationships, (3) perceived health, (4) job characteristics, and (5) work outcomes, respectively. In sum, our analyses provided converging evidence that workaholism, burnout and engagement are three different kinds of employee well-being rather than three of a kind.

Scheier, M., Wrosch, C., Baum, A., Cohen, S., Martire, L., Matthews, K., Schulz, R., and Zdzienicka, B., (2006) The life engagement test: assessing purpose in life. *Journal of behavioral medicine*, 29 (3)

Abstract: This article describes a 6-item scale, the Life Engagement Test, designed to measure purpose in life, defined in terms of the extent to which a person engages in activities that are personally valued. Psychometric data are presented including information about the scale's factor structure, internal consistency, test-retest reliability, convergent validity, discriminant predictive validity, and norms. The data suggest that the Life Engagement Test is psychometrically sound across different gender, age, and ethnic groups and is appropriate for wider use. Discussion centers on the use of the Life Engagement Test in behavioral medicine and health psychology research and recent associations that have begun to emerge between the scale and health-relevant outcomes.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior (2003): A new look at the interface between non-work and work. *Journal of Applied Psychology*, 88, 518-528.

Abstract: This study examines work-related outcomes of recovery during leisure time. A total of 147 employees completed a questionnaire and a daily survey over a period of 5 consecutive work days. Multilevel analyses showed that day-level recovery was positively related to day-level work engagement and day-level proactive behavior (personal initiative, pursuit of learning) during the subsequent work day. The data suggest considerable daily fluctuations in behavior and attitudes at work, with evidence that these are related to prior experience and opportunity for recovery in the non-work domain.

Storm, K. & Rothmann, I. (2003). A psychometric analysis of the Utrecht Work Engagement Scale in the South African police service. *South African Journal of Industrial Psychology*, 29, 62-70.

Abstract: The objectives of this research were to validate the Utrecht Work Engagement Scale (UWES) for the South African Police Service (SAPS) and to determine its construct equivalence and bias in different race groups. A cross-sectional survey design was used. Stratified random samples (N = 2396) were taken of police members of nine provinces in South Africa. The UWES and a

biographical questionnaire were administered. Structural equation modeling confirmed a 3-factor model of work engagement, consisting of Vigor, Dedication, and Absorption. These three factors have acceptable internal consistencies. Exploratory factor analysis with target rotation showed equivalence on the three factors for different race groups in the SAPS. No evidence was found for uniform or non-uniform bias of the items of the UWES for different race groups.

Vansteenkiste, M., Neyrinck, B., Niemiec, C.P., De Witte, H. & Van den Broek, A. (2007). On the relationship between work value orientations, psychological need satisfaction and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology*, 80, 251-277.

Abstract: Using self-determination theory, two studies found that holding extrinsic, relative to intrinsic, work value orientation was associated with less positive outcomes (i.e. less satisfaction with, dedication to and vitality while on the job) and more negative outcomes (i.e. higher emotional exhaustion, short-lived satisfaction after successful goal-attainments, and turn-over). These relationships were not limited to job outcomes, but also emerged using indicators of employees' general mental health. Moreover, income level did not moderate these relationships. Study 2 found that holding an extrinsic, relative to an intrinsic, work value orientation was detrimental to employees' job outcomes because these orientations thwarted the satisfaction of the basic psychological needs for autonomy, competence and relatedness at work.

Xanthopoulou, D., Bakker, A.B., Demerouti, E. & Schaufeli, W.B. (2007). The role of personal resources in the Job Demands-Resources model. *International Journal of Stress Management*, 14, 121-141.

Abstract: In an attempt to expand the job demands-resources (JD-R) model, we examined the role of three personal resources (self-efficacy, organizational-based self-esteem and optimism) in predicting exhaustion and work engagement. We hypothesized that personal resources (1) moderate the relationship between job demands and exhaustion, (2) partially mediate the relationship between job resources and work engagement, and (3) determine how employees perceive their work environment and well-being. Hypotheses were tested among 714 Dutch employees of an electrical engineering company. Results show that self-efficacy, optimism, and organizational-based self-esteem do not manage to offset the relationship between job demands and exhaustion. Instead, our findings suggest that these personal resources mediate the relationship between job resources and engagement/exhaustion, and influence the perception of job resources. In conclusion, the study expands the JD-R model by investigating all possible functions of personal resources in its processes. Further, the study emphasizes the crucial role that job and personal resources play in determining employee well-being.

Yi-Wen, Z., & Yi-Qun, C. (2005). The Chinese Version of the Utrecht Work Engagement Scale: An examination of reliability and validity. *Chinese Journal of Clinical Psychology*, 13, 268-270.

Abstract: The objective is to introduce the Utrecht Work Engagement Scale developed by Schaufeli et al., and to examine its reliability and validity in Chinese Middle School teachers. First, 47 Chinese teachers were pre-tested using the Chinese translation of the UWES. Two items with unsatisfactory discrimination indexes were deleted. Second, 277 teachers completed a battery of structured questionnaires, including the Chinese version of the UWES, SF-36 Health Survey, COPE and the Job Characteristics Questionnaire. Reliability and validity of the Chinese version of the UWES were analyzed. Results of the CFA confirmed the hypothesized three-factor model of work engagement, consisting of Vigor, Dedication, and Absorption. All of the three subscales showed acceptable internal consistencies. Work engagement and its sub-components showed complicated relationships with general health, coping strategies, and job characteristics, which are consistent with our expectations. It is concluded that the Chinese version of the UWES is reliable and valid for application in China.