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THEMATIC ARTICLES – THE CHALLENGES OF MIGRANTS' SOCIAL INTEGRATION

Identity, Over-Commitment, Work Environment, and Health Outcomes among Immigrant Workers

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Abstract. In this study, we compared immigrant workers with native workers on several factors related to their perception of their work identity anchored in their psychosocial work environment, and the result of these factors on work stress and subjective health. The data for the study came from 924 employees in the Norwegian food and beverage and among them were 84 immigrant workers. We found significant differences in levels of over-commitment, mental health and stress between native and immigrant workers. Immigrant workers perceived more over-commitment, more mental health problems and higher job stress than native workers did. The personal ambitions of the immigrants, measured as a higher level of over-commitment was seen as a driving force behind the pattern we found. This could have been a possible threat to an increased level of stress leading to mental health problems, but commitment to the firm they worked in was found to have a compensating effect in the final path analysis.

Key words: *mental health, over-commitment, stress, immigrant workers, work identity*

Introduction

Work migration is a phenomenon which has increased significantly both in intensity and diversity over recent decades (Morawska, 2001; Okólski, in Wallace and Stola, 2002, p. 105). As companies in an era of neoliberalism seek to cut costs, they look for cheap and flexible labor (Sennett, 1998, p. 127). Immigrant workers represent a low-cost labor supply, not just because their salaries are normally lower than those of native workers, but also because social and reproduction costs

are carried by the sending society. Persisting geographical differences in employment opportunities, combined with a global drive towards consumerism, are one of the main economic push–pull factors of migration (Castles, 2002). At the same time, migrating has become easier through facilitated travel and improved communication (Castles, 2002). In the present study, we want to compare immigrant workers with native workers on several factors related to their perception of their work identity anchored in their psychosocial work environment, and the result of these factors on work stress and subjective health. Our main hypothesis is that immigrant workers are in a situation where they have to rely on their own recourses more than the collective recourses, and thus, are at greater risk of experiencing negative stress and bad health if they perceive little support and respect from their employer, boss, or colleagues.

The present pattern of temporary work migration adds dimensions to the field of study, for example, when it comes to ideas of identity, belonging and commitment. Ideas of identity are often used as an approach to understand the individual experience of work migration. Identity is defined as the ideas we have about who we are and what groups we belong to (Jenkins, 2008). Identity and a sense of belonging, then, are fundamental for shaping and mediating immigrant workers' experiences in the receiving society. Giddens defines identity as the ongoing sense the self has of who it is, as conditioned through its ongoing interaction with others (in Matthews, 2000). While identity conditions the individual experiences of migration, these experiences in turn impact on identity. For example, several studies note that many immigrant workers adopt the norms of the locals during the migration period (see, for example, Breman, 1996). Many immigrants therefore live the experience of having flexible or contradictory roles and statuses in the sending and receiving society. For some, the ambiguity may represent the liberty to express several identities and transcend boundaries, while for others it may pose a threat to the coherency of who they are and where they belong.

According to Zeytinoglu (2002) the uncertainty of flexible work lives commonly causes problems such as low commitment, low autonomy, low opportunities for developing skills, and low chances of a career. It seems that many employees with a short-term job perspective develop a more personal kind of work commitment than the more well known organizational commitment. This more personal commitment seems to be directed towards their own career or

profession, not their present employer and the future of the company (Hecksher, 1995). Rewards from the present job are to a large degree expected to come in the next job. This is likely to apply to immigrant workers as well, who often may have a limited time perspective towards their present job either because they are on short, seasonal work contracts or they practice a form of circular migration. In our study we therefore expect immigrant employees to show lower organizational commitment than native employees.

Karasek and Theorell (1990) have defined the psychosocial work environment according to the original job demand–decision latitude model of Karasek (1979), often labeled the Demand–Control (DC-) model. According to the DC-model, the quality of the psychosocial work environment is mainly dependent on the individual worker's perceived levels of psychological job demands (demands) and decision latitude (control). The central component in demands is task requirements (Karasek and Theorell, 1990). Control represents a combination of two theoretically distinct concepts: the breadth of skills usable on the job (skill discretion), and authority over decision-making regarding one's own work tasks or work situation (decision authority or autonomy) (Karasek and Theorell, 1990). The demand–control model was later expanded by including supervisor and co-worker support – labeled social support and labeled the DCS-model (Karasek and Theorell, 1990). Studies on cardiovascular disease and absenteeism have shown that social support is one of the most important factors in reducing stress and strain, either directly or indirectly, in the workplace (Karasek and Theorell, 1990; Shumaker and Czajkowski, 1994). We believe that workplace control and support from colleagues and supervisors is of minor importance for immigrant workers because they are less integrated in the work environment, and therefore this model has modest relevance for the work identity of immigrant employees and the levels of work-related stress and health problems they experience. For native workers, however, this model has a greater impact and will explain more of the work-related stress they experience.

Siegrist's Effort–Reward Imbalance model (ERI-Model) (1996) has been one of the most influential models in recent work environment research. The ERI-model seeks to explain variations in work-related stress by focusing on three hypotheses. The first focuses on the experienced (im)balance between the invested amount of extrinsic effort and the amount of received rewards, whereas the second usually concerns the assumption that high levels of intrinsic effort, or over-

commitment, also elevate the levels of stress. The third hypothesis is the interaction hypothesis of the two aforementioned relationships. The ERI-model therefore has a broader focus compared to other work environment models, in that it includes both individual characteristics, such as the concept of intrinsic effort or over-commitment, and more socially-based concepts, such as the overall reward, payment or status implied by the job.

The term over-commitment is most often associated with, and studied within, the theoretical framework of the ERI-model (1996). Originally, however Siegrist (1996) developed this construct from a critical review of the personality theory of Type A-behavior. An individual's tendency to over-commit to work results from a behavioral pattern, called Type A-behavior, where one exaggerates the intrinsic effort one mobilizes to solve a problem. Over-committed persons often judge their work situations as more demanding than less committed persons, because of the unrealistic intrinsic demands they place upon themselves, which in turn may lead to increased levels of stress (Siegrist, 1996). Over-commitment may, however, also be reinforced by stressors such as work pressure or expectations of performance. The uncertainty of the future puts many immigrant workers under great pressure to maximize the outputs of their work here and now, and it also pushes them to try to achieve perfection in their work in order to be rehired for a new period next time. For an immigrant worker the possibility of a large income for a period also has to be taken into consideration. Thus, immigrant workers tend to accept long and hard work days and unsociable work hours, and in many cases keep silent about unacceptable work conditions. We therefore believe that immigrant workers in general will obtain higher scores on over-commitment than native workers. Their position in the labor market forces them to invest more of themselves to secure their possibilities for the future. We also find it likely that many immigrant workers will experience a greater imbalance between invested efforts and rewards than native workers, seeing that they often need to put in extra effort to overcome barriers related to language and culture.

The current study was conducted to evaluate the following hypotheses:

HI. Immigrant workers perceive higher levels of over-commitment and effort–reward imbalance and report more work stress and mental health problems.

HII. Immigrant workers perceive lower organizational commitment than native workers.

HIII. The two work environment models (DCS & ERI) will have different impacts on work stress, commitment, and mental health reactions for immigrant and native workers.

HIV. Mental health will be differently predicted in the two samples:

a) The native sample will show a traditional association from over-commitment through demands and job stress to mental health.

b) The immigrant sample will show an alternative association through commitment.

Methods

Participants and procedures

The data for this study came from 924 employees in the Norwegian food and beverage industry, representing 45 different firms. Among them were 84 immigrant workers distributed across 21 of the firms with one or two immigrant workers employed at most of them. Participation in the study was voluntary. Immigrants were defined based on one question in the questionnaire asking if the respondent had a foreign language background or not. The questionnaires were collected and completed under the auspices of the Norwegian Labour Inspection Authorities. This institution monitors the current working conditions for the total labor force in Norway. This study was a part of a five-year project with the purpose of providing the institution with a picture of the working conditions for employees in this industry. The firms were selected as being representative of the industry's population, covered all geographical parts of the country, with production areas representative of the industry as a whole. The primary work task of 85.5% of the sample was production, and most immigrant workers were in production (93 %). A total of 19% of the whole sample had a responsibility as a leader and 17% of the immigrant workers were leaders. Preliminary analysis showed that the leaders had deviating scores on many of the tests irrespective of which of the two groups of interest they belonged to for this study. We thus decided to take all those with leadership responsibility out of the final analysis. Local inspectors from the Labour Inspection Authorities distributed and collected the questionnaires. After collection, the surveys were sent directly to the researchers.

The 45 firms in our sample varied in size from four to 185 employees, with a mean of 21. The firm response rate ranged from 17.7% to 100% with an average response rate of 59.4%. Of the 924 participants, 389 (42.1%) were women and 533

(57.7%) were men. Two participants did not report gender. The average age of the respondents was 40.6 years (SD = 11.58), the youngest participant being 17 and the oldest 68. Ninety-four percent worked full-time, the rest were employed on a part-time or temporary basis. The participants worked on average 34.5 hours per week (SD = 13.2). Their work consisted mainly of tasks related to production, such as packing food or managing machines. Regarding the level of education, 27% had completed seven to nine years of education, and 63.7% had a high school degree. A small percentage of respondents, 8.7%, had completed one to six years in college.

Measures

The questionnaire used in this study consisted of a mixture of already validated scales and items developed for the purpose of this study. The demand, control and support dimensions of the psychosocial work environment were measured with, or based on, the original Job Content Questionnaire (JCQ) of Karasek et al. (1998). For validity reasons, the items were translated into Norwegian and then translated back into English by two independent researchers.

Job specific demands: This index consisted of four items that assessed how often the participants work with short deadlines, work quickly and under time pressure. The four items were: (1) *How often do you perform work that demands constant attention?* (2) *How often do you work with constant time pressure due to heavy workloads*? (3) *How often do you perform work with short deadlines*? and finally (4) *How often do you perform work that requires working very fast*? The response categories were given on a five-point scale ranging from "very seldom" to "very often." The Cronbach's alpha for this scale was .73.

Job specific control: Job specific control was measured with four items: (1) *How often can you influence decisions about your own work?* (2) *How often can you determine how your work should be executed?* (3) *How often do you have the opportunity to learn new things in your work?* and (4) *How often do you have the opportunity to learn things beyond your own work field?* Scale reliability was .80 and the response alternatives ranged from "very seldom" to "very often".

Job specific support: This index consisted of four items: (1) *How often do you receive help and support from your co-workers?* (2) *How often do you feel accepted in your work group?* (3) *How often do you experience a spirit of cohesion in your work group?* and (4) *How often do your co-workers back you up when it is needed?* Cronbach's alpha was .80 and the response categories were given on a five-point scale

ranging from "very seldom" to "very often."

Over-commitment: This index consisted of six items from the intrinsic effort dimension of Siegrist's (1996) ERI questionnaire. The index consisted of items that assessed the amount of intrinsic effort or commitment being invested at work. Examples of items from this index are: *I only feel successful when I perform better than I expected;* and *I usually take criticism very seriously*. The Cronbach's alpha of this index was .76. The response categories were given on a four-point scale ranging from "false" to "true."

Effort–reward: This index consisted of 11 items developed by Siegrist (1996) in his ERI questionnaire. The items reflect an Effort–Reward Imbalance, which defines the psychosocial work environment with a base in the two main dimensions, Effort and Reward. Examples of items from this index are: *I receive the respect I deserve from my colleagues*; *I am treated unfairly at work;* and *Considering all my efforts and achievements, my job prospects are adequate.* The Cronbach's alpha of this scale was .64. The measures had a five-point scale ranging from "strongly disagree" to "strongly agree."

Organizational commitment was measured by the short form of the Organizational Commitment Questionnaire (OCQ) (Mowday, Steers and Porter, 1979). The OCQ is a nine-item scale subsuming (1) a desire to maintain membership in the organization, (2) belief in and acceptance of the values and goals of the organization, and (3) a willingness to exert extra effort on behalf of the organization. Cronbach's alpha was .88.

Perceived job stress reactions were measured with two different scales. One of them is Cooper's Job Stress Scale (1981). Originally this index consists of 25 questions with six response categories ranging on a scale from "no stress at all" to a "great deal of stress." The scale was originally divided into four subscales – work, communication, leadership and relocation – where each subscale reflects the amount of stress experienced in association with these aspects of everyday work life. The scale is however often used as a global scale, rather than as four separate subscales. A principal component analysis was conducted on the 25 items, which resulted in an extraction of five factors with eigenvalues above 1. However, closer inspection of the rotated pattern matrix revealed that most of the items showed relatively high loadings (>.50) on the first factor. We therefore chose to use the global scale, but dropped three items from the overall scale due to small loadings on the first factor. The overall scale had a Cronbach's alpha of .92.

Mental health reactions were the other job stress reaction scale we used. It was measured with five items based on items used by the European Foundation for the Improvement of Living and Working Conditions in their survey on working conditions and work-related health in the European Union. Using a four-point scale the questions measure *if their work has caused*: stress, headaches, general fatigue, sleeping problems, and muscular pains in shoulders and neck (α = .78). Responses were given on a four-point scale ranging from "seriously afflicted "to "not afflicted".

Statistical analysis

The analyses were conducted using SPSS (15.0). Hierarchical regression analyses were carried out for each group separately to (1) determine the effects of the different variables on commitment and the two stress variables and (2) examine to what degree the complete model could explain the variation in these dependent variables in each group. Since our model included several interactions and only two subgroups, we chose to do separate regression analyses for each subgroup, rather than to incorporate a long list of product terms in one analysis. The use of separate analyses is the easiest way to compare the effects of the variables in the various groups. However, using this method, it is not possible to see directly if the differences in effects between the groups are statistically significant. Consequently, we needed to calculate this manually in each case using the following formula: $t = D/s_d$. (D being the difference between two given unstandardized coefficients, and s_d being the standard error for that difference, $s_d = \sqrt{(s_1^2 + s_2^2)}$). The predicted interaction effects were included in the regression analysis using the procedure recommended by Aiken and West (1991), which involves calculating the product terms from mean-centered variables to prevent multicolinearity. Using AMOS software (Arbuckle and Wothke, 1999), separate SEM (structural equation modeling) analyses were performed for the Hypotheses IVa and IVb using the native sample for IVa and the immigrant sample for IVb. Prior to the SEM analyses, the samples were screened for missing data. Cases with missing data after index computation were deleted.

Fit indices

As model evaluation continues to be an unsettled issue in SEM analysis (Arbuckle and Wothke, 1999), a mixture of fit indices was used to evaluate the models in the present paper: The traditional χ^2 is perhaps best avoided due to its vulnerability to sample sizes (Hu and Bentler, 1995). The Normed χ^2 (χ^2/df), on the other hand, may,

according to Hanse and Engström (1999) identify both "overidentified" models (values less than 1.0) and poorly fitted models (with values more than 2.0, or more liberally, more than 5.0). AGFI (adjusted-goodness-of-fit index) takes into account the degrees of freedom available for testing the model which should be equal to or greater than .90. TLI (Tucker-Lewis coefficient) and the (CFI) (comparative-fit-index) should also be equal to or greater than .90. RMSEA (root-mean-square error of approximation) compensates for the effect of model complexity, favoring parsimony. According to Browne and Cudeck (1993), values of .05 or less indicate a close fit, and values of about .08 indicate a reasonable error of approximation.

Results

Table 2 shows the mean scores and correlations on the study's variables for each employment group. The table shows that there exist significant differences in levels of over-commitment, mental health and stress between the groups. Immigrant workers perceived more over-commitment, more mental health problems and higher job stress than native workers. Hypothesis I was partially confirmed, but hypothesis II was not supported. The correlation matrix shows that effort–reward and over-commitment correlate highly with all three dependent variables for both employee groups. In general the correlations were modest and in the predicted direction.

Table 2. Descriptive statistics for the employment groups and correlation matrix for the study variables

Scale	Correlations											
	Mean (SD) [a]	1	2	3	4	5	6	7	8	9	10	11
1. Gender		-	-.05	-.09	.22	.20	.11	-.16	.06	.20	.23	.16
2. Age		.07	-	-.24	-.26*	.16	.12	.13	.05	-.05	.02	-.06
3. Seniority		-.01	-.48**	-	-.11	-.05	.01	-.01	-.01	-.01	-.22	.05
4. Demands	IE: 3.51 (.97) NE: 3.43 (.87)	.00	.02	.07	-	-.20	-.04	-.22	.23	.13	-.23	.18
5. Control	IE: 2.88 (1.02) NE: 3.43 (.94)	.03	.08	-.03	-.05	-	.45**	.28*	.05	.23	.35**	-.14
6. Support	IE: 3.40 (.89) OE: 3.48 (.89)	-.16**	.02	-.02	.01	.45**	-	.45**	.15	.35**	.19	-.19
7. Effort–reward	IE: 2.86 (.49) NE: 2.95 (.49)	-.09**	-.10**	.09*	-.16**	.33**	.42**	-	.11	.33	.38**	-.45**
8. Over-commitment	IE: 2.51 (.66)** NE: 1.99 (.54)	-.04	.05	-.05	.22**	.12**	-.03	-.21**	-	.35**	-.18	.17
9. Commitment	IE: 3.13 (.67) NE: 3.09 (.67)	.04	-.19**	.14**	-.08	.30**	.34**	.46**	.03	-	.44**	-.23
10. Mental health reactions	IE: 3.15 (.64)** NE: 3.40 (.51)	.05	-.01	-.08*	-.26**	.20**	.19**	.37**	-.20**	.21**	-	-.25
11. Stress	IE: 2.46 (.88)** NE: 2.11 (.78)	.04	.15**	-.03	.31**	-.11**	-.28	-56**	.40**	-.30**	-.50**	-

Note: NE = Native Employees, IE = Immigrant Employees. Correlations for the immigrant group are shown above the diagonal, for the natives below.

* = p < .05, **=p<.001
[a]: differences between means were calculated by t-test

Hierarchical regression analyses were carried out entering the variables and product terms manually in the following order: Block 1: gender, age, seniority; Block 2: demands, control; Block 3: demands X control; Block 4: over-commitment, effort–reward; Block 5: over-commitment X effort–reward. The predicted interactions between demands and control and between over-commitment and effort–reward on mental health, proved to be insignificant for both groups, and were therefore excluded from the analyses. (Removing the insignificant product terms from the analysis makes it easier to interpret the main effects.) In Tables 3, 4, and 5 the results of the regressions are presented.

Table 3. Hierarchical regression analyses for immigrant and native employees

	Mental health					
Employment group	**Immigrant employees**			**Native employees**		
	Beta	t-value	R^2 Change	Beta	t-value	R^2 Change
Age	-.17	-1.257		-.04	-.987	
Gender	.28	2.117*		.09	2.409*	
Seniority	-.08	-.600		-.13	-2.966*	
Block 1			.02			.01
Demands	-.06	-.468		-.18	-4.777**	
Control	.19	1.296		.11	2.642*	
Support	-.03	.192		.03	.631	
Block 2			.08			.12
Over-commitment	-.22	-1.622		-.11	-2.984*	
Effort–Reward	.41	2.891*		.28	6.726**	
Block 3			.13			.08
Sum R^2 adj.			.23			.21
N =			53	.		634
F			3.01*			21.72**

Dependent variable is Mental health reactions, p <.05 = *, p <.001 = **

The complete regression model explained 23% (R^2 = 0.23) of the total variance in mental health reactions for the immigrant workers, 21% for the native workers. For job stress the model explained 21% of the total for the immigrant workers, 44% for the native workers. For commitment the model explained 29% for

the native workers and 22% for the immigrant workers. Tables 3-5 show how the various variables are associated with the two dependent stress measures and commitment for each of the employment groups. Mental health problems are somewhat more common among women than men in both employment groups. Effort–reward was in general the most influential predictor for all three dependent variables for both groups, with the exception of commitment for the immigrant workers. Over-commitment was associated with increased job stress and mental health problems for the native workers, but was most strongly associated with commitment in the immigrant group. Demands showed the predicted association with stress and health among the native workers, but proved to be unrelated to the stress and health conditions of the immigrant workers. The effects of control and social support on job stress and mental health were generally low for both groups and not in line with the model predictions. However, social support showed a stronger association with commitment. Hypothesis III was partly confirmed.

Table 4. Hierarchical regression analyses for immigrant and native employees.

	Job stress					
Employment group	**Immigrant employees**			**Native employees**		
	Beta	t-value	R^2 Change	Beta	t-value	R^2 Change
Age	.13	.890		.13	3.475	
Gender	.25	.630		-.03	-1.076	
Seniority	-.09	1.737		.09	2.529	
Block 1			.00			.03
Demands	-.03	-.203		.17	-5.554**	
Control	-.09	-.608		.06	1.803	
Support	-.13	-.790		-.12	-3.178*	
Block 2			.10			.16
Over-commitment	.14	.983		.25	7.869**	
Effort–Reward	-.43	-2.942*		-.44	12.506**	
Block 3			.11			.25
Sum R^2 adj.			.21			.44
N =			54	.		637
F			2.82*			62.32**

Dependent variable is Job Stress., p <.05 = *, p <.001 = **

Further calculations show that the differences in regression coefficients between the two employment groups seen in Tables 3-5 (and presented in this section)

are insignificant, with the exception of the difference in the association between gender and mental health. However, due to the small size of the immigrant sample, even quite substantial differences may prove to be insignificant. Some of the tendencies shown in Tables 3-5 may therefore reflect true differences between the two groups even if they are insignificant. (The calculations were based on the unstandardized coefficients. See the Methods section for the formula used to compare the regression coefficients).

Table 5. Hierarchical regression analyses for immigrant and native employees

	Commitment					
Employment group	**Immigrant employees**			**Native employees**		
	Beta	t-value	R^2 Change	Beta	t-value	R^2 Change
Age	-.10	-.797		-.15	-3.833**	
Gender	.09	.740		.11	3.239**	
Seniority	-.09	-.780		.04	1.082	
Block 1			-.02			.04
Demands	.10	.727		-.04	-1.240	
Control	.03	.237		.11	2.717*	
Support	.25	1.657		.16	4.040**	
Block 2			.13			.20
Over-commitment	.27	2.113*		.10	2.885*	
Effort–Reward	.22	1.571		.37	9.260**	
Block 3			.11			.09
Sum R^2 adj.			.22			.29
N =			58	.		640
F			3.05*			33.99**

Dependent variable is Commitment, p <.05 = *, p <.001 = **

Structural equation modeling (SEM) analysis was performed to test Hypothesis IVa and IVb. One important assumption associated with SEM analysis that is often ignored in the research literature is the assumption of multivariate normal distribution (Byrne, 2001), thus the first step of any SEM analysis should be an assessment of multivariate normality. Accordingly, in the present study, the sample was assessed and found to be fairly normal.

Figure 1. Model 1 for the prediction of mental health in native workers by ERI, DCS, stress and commitment, (HVa)

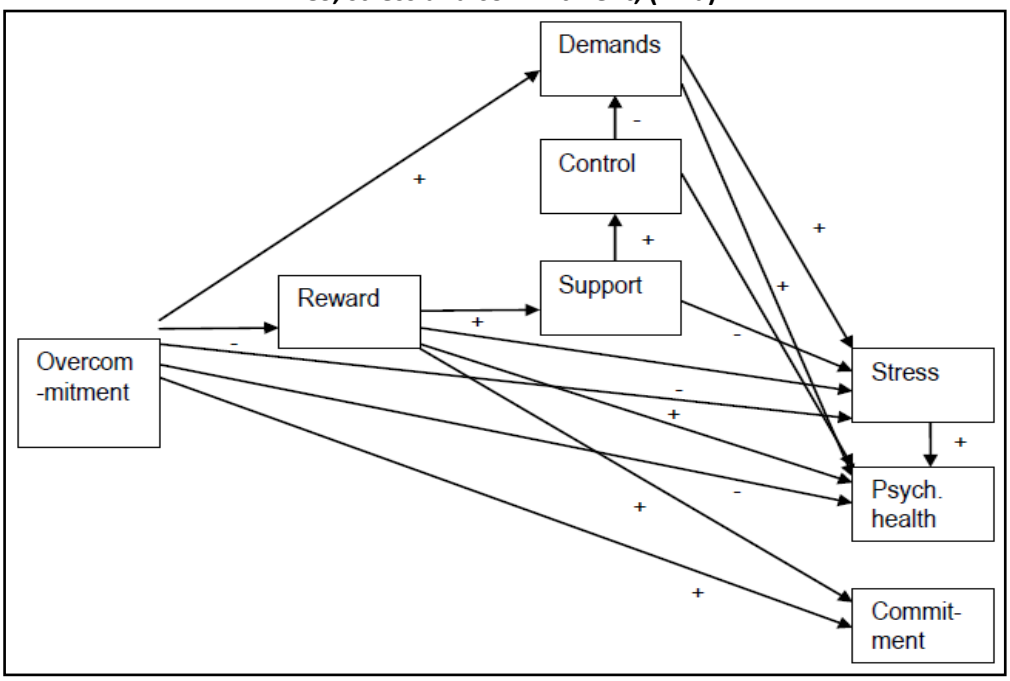
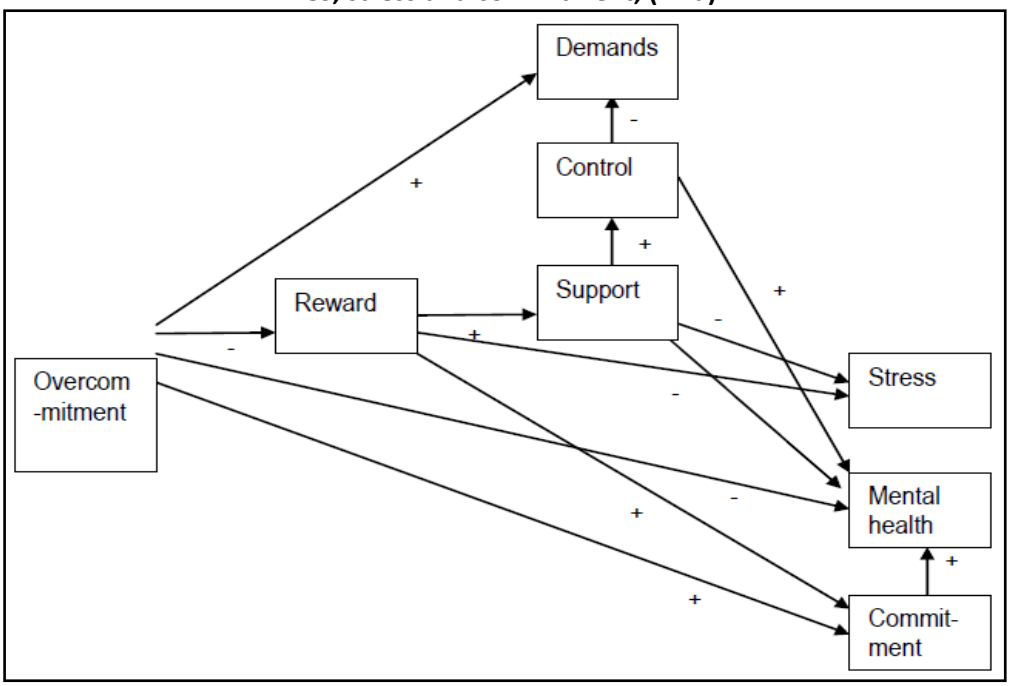


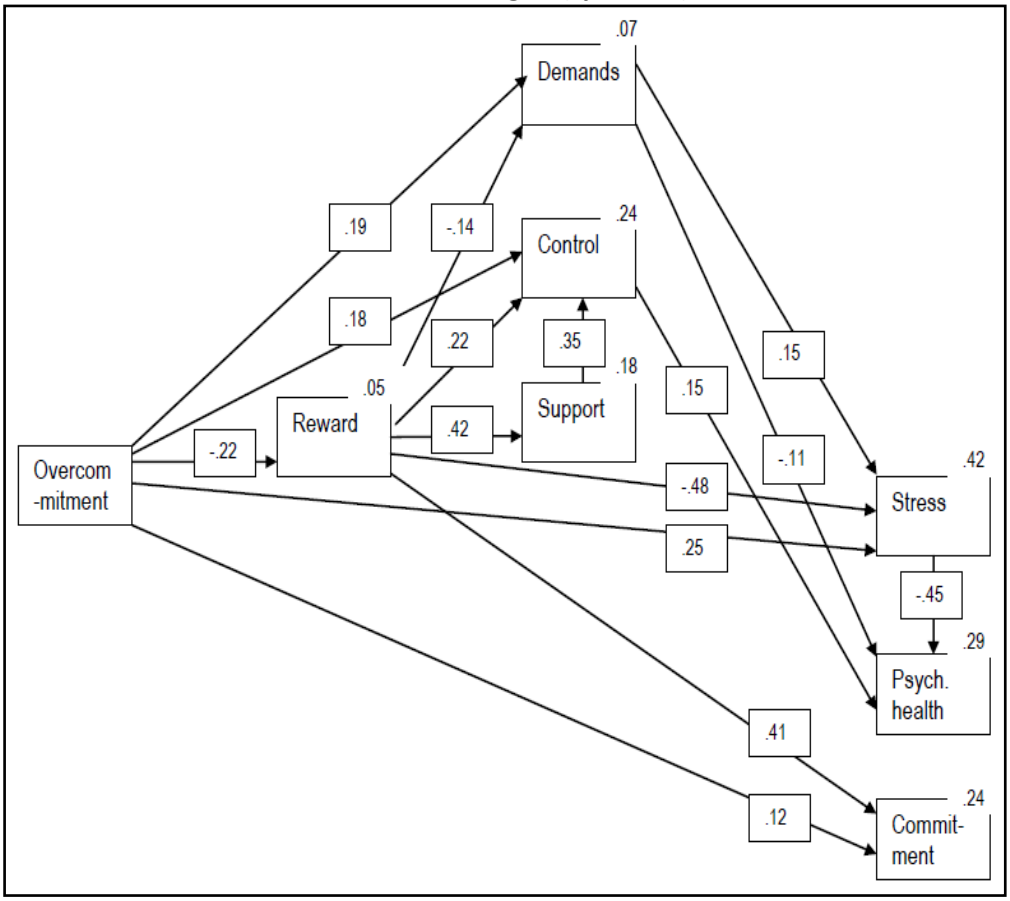
Figure 2. Model 2 for the prediction of mental health in native workers by ERI, DCS, stress and commitment, (HVa)



The original model specified by Hypothesis IV (model 1), yielded a poor fit (*df* = 12, χ^2 = 77.144, χ^2/df = 6.429, AGFI = .915, TLI = .862, CFI = .943, RMSEA = .091). Hence, in the interests of parsimony (Byrne, 2001), paths not significant at a .001 alpha level were deleted from model 2. However, model 2 was also a poor fit (*df* = 14, χ^2 = 85.752, χ^2/df = 6.125, AGFI = .919, TLI = .875, CFI = .938, RMSEA = .089).

Thus modification indexes were inspected, as suggested by Byrne (2001). This suggested that a new negative path be specified from Effort–Reward to Demands, and a positive path from Effort–Reward to Control. Both are reasonable in a theoretical sense, according to the DCS and ERI models (see discussion for details). Model 3 was then re-specified to include the estimation of these two regression paths, pictured in Figure 3.

Figure 3. Standardized coefficients for Model 3, HVa observed variables are shown in rectangles (p* < .001)**



A model with reasonable fit was then achieved (df = 12, χ^2 = 41.948, χ^2/df = 3.496, AGFI = .955, TLI = .939, CFI = .974, RMSEA = .062). As hypothesized in Hypothesis IVa the native sample showed a traditional pathway from over-commitment through demands and job stress to mental health and from over-commitment through stress to mental health. Also as hypothesized, there was an effect of over-commitment on commitment that was not carried through to mental health. However, the hypothesized direct effect of over-commitment on mental health, and indirectly via effort–reward to mental health, was not significant. According to Hypothesis IVa, there was also an indirect effect of over-commitment through effort–reward and control on mental health, however, additional indirect effects of effort–reward on mental health through demands and support that were not hypothesized were also significant at a .001 alpha level.

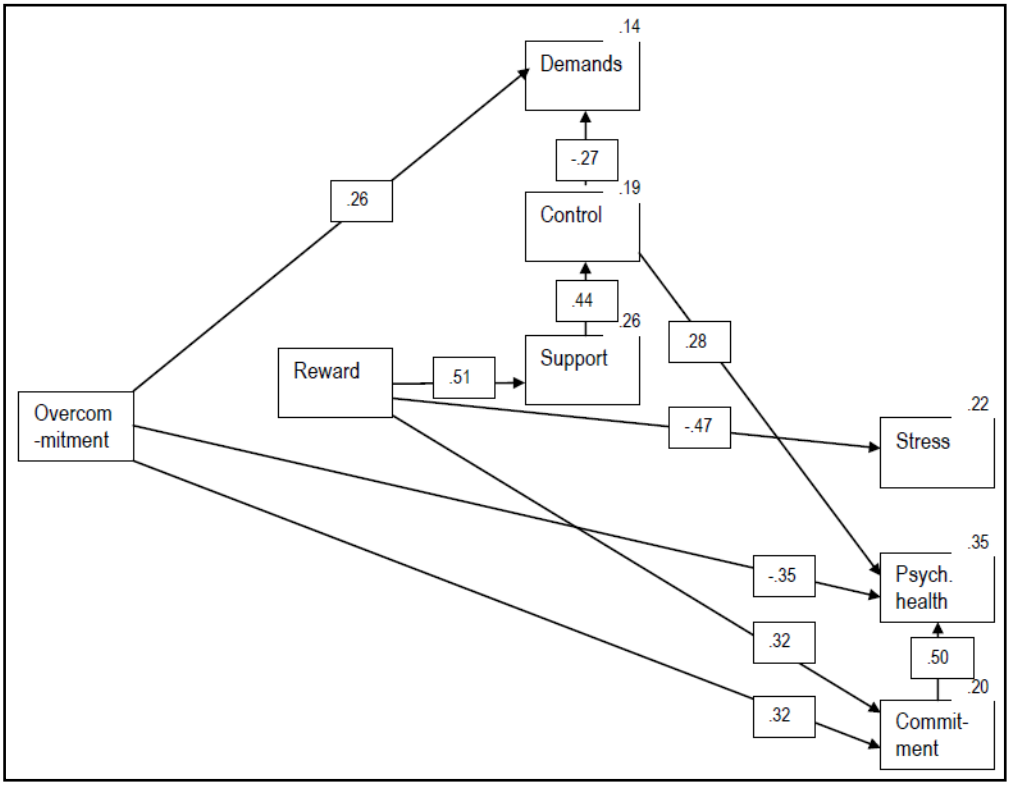
Structural equation modeling (SEM) analyses were also performed to test the model for Hypotheis IVb. An assessment of the immigrant sample indicated moderate non-normality, and a bootstrapping procedure was employed because this sample was only of medium size. Bootstrapping works by basing inferential procedures on a concrete sampling distribution from the sample at hand rather than the traditional sampling distribution created by a hypothetical infinite number of samples from the population of interest (Efron, 1982). The concrete sampling distribution thus reflects the distribution of the sample, rendering the assumption of normality superfluous. A bootstrap sample of 1000 was drawn (with replacement) and used for the analysis of IVb.

The original model specified by IVb (model 1), yielded a more or less reasonable fit (df = 14, χ^2 = 18.823, χ^2/df = 1.344, AGFI = .807, TLI = .894, CFI = .947, RMSEA = .075). However, several of the hypothesized paths were not significant with 90% confidence intervals using bias corrected bootstrap estimation, and were deleted in the interests of parsimony. The new goodness-of-fit indices show that the re-specified model 2 was better fitting than model 1 (df = 18, χ^2 = 21.126, χ^2/df = 1.174, AGFI = .833, TLI = .947, CFI = .966, RMSEA = .054). Again, following Byrne (2001), modification indexes were inspected but no new paths were suggested. Hence, model 2 was the best fitting model for IVb, and is pictured in Figure 4.

As hypothesized in IVb, the immigrant sample showed an alternative path of over-commitment on mental health through commitment as well as a direct effect on mental health. Also, according to IVb, the effect of over-commitment on demands was not carried through to demands or stress. Still in accordance with

IVb, effort–reward had significant direct effects on both commitment and mental health. However there were no significant mediating effects of effort–reward. Also, the hypothesized effect of support on stress was not significant; however an indirect effect through control was found on mental health and demands.

Figure 4. Standardized coefficients for Model 3, HVb observed variables are shown in rectangles



All values are based on bias corrected bootstrap estimation. Latent constructs are shown in ellipses and observed variables are shown in rectangles. * Indicates significant coefficients with 90% confidence intervals using bias-corrected percentile method.

Discussion

The results indicate that the ERI model is more relevant than the DCS model for explaining stress, commitment and mental health in immigrant workers. Some of these differences can be attributed to a larger sample of native workers, enabling the generally lower beta values of the DCS model to become significant. However, it seems clear that the native workers' levels of stress and mental health are substantially more affected by demands than is the case for the immigrants.

Correspondingly, over-commitment is clearly more influential toward the immigrants' level of commitment, and a similar near significant tendency for immigrants' level of mental health.

Though corresponding perfectly to the regression analyses, the picture becomes even clearer looking at the SEM analyses, for two reasons: First, more comprehensive understanding can be gleaned from incorporating mediation effects, and second, the use of bootstrapped confidence intervals for the immigrant sample evens out some of the differences in sample sizes. Thus, the SEM analyses demonstrate that apart from the common strong and general effect of effort–reward, the two samples incorporate very different explanatory routes for mental health; The native sample shows a traditional demands–stress route for mental health, whereas the immigrant sample shows an interesting indirect effect of over-commitment via commitment towards mental health, as well as a direct effect of over-commitment reducing mental health problems. The traditional demands–stress route to mental health found in the native sample corresponds to earlier findings and theory and warrants no explanation. However, the over-commitment to commitment route in the immigrant sample sheds new light on the immigrant situation. It points to immigrants' mental health as being more dependent on internal drive than external performance demands and stress experience. And further, that there is a beneficial indirect effect via increased commitment that balances the direct drawback effect of over-commitment on mental health.

These results are easily understood by viewing immigrants as not wholly integrated in the native culture. Earlier cross cultural comparisons between Norwegian and Indian native worker populations have demonstrated the same difference in the perceptions of demands and stress (Pal and Saksvik, 2008). Hence, it is fair to assume that these results are the product of cultural interpretational frames more strongly determining individual ratings of real working environments than is usually assumed in most studies of predominately homogenous worker samples. Also, not being wholly integrated in the native culture, the affective commitment to the workplace becomes more crucial for the immigrants' mental health; they are more vulnerable to experiences of lacking inclusion and a sense of belonging. Interestingly, though, the individual immigrant workers' level of over-commitment plays into this, and this too can be understood in a cultural context. Siegrist's (1996) concept of over-commitment and subsequent

operationalization builds on an understanding of individual tendencies to over-interpret and even create demands over and above those set by organizations and their managers. This is, however, cast within a cultural frame of what Bauman defines as "solid modernity" with the welfare state providing continuity and stability in the world of work (2000). It constitutes healthy levels of personal commitment, and here, over-commitment in extreme cases become incongruent with integration and commitment. Immigrant workers originating from cultural frames resembling the "liquid modernity" model of Bauman (2000) might have less of this negative connotation to over-commitment, i.e., the over-commitment takes a more collective form. A slightly alternative way of understanding the particular finding concerning over-commitment is that for immigrant workers over-commitment is more an internal drive towards integration in the workplace culture and collective achievement, whereas for native workers it is more of a drive towards individual achievement.

Although it is clear from the present results that the DCS model had the least explanatory power in the immigrant sample, it is equally clear that the ERI model has the most fundamental role in both samples. The importance of over-commitment notwithstanding, the effort–reward balance had the most solid and dominating explanation effects in both samples. Hence, the (im)balance between effort and reward may be of more significance to understand how work can best be organized in a modern work life. This can be seen in connection to findings related to how justice is perceived (Hammer, Bayazit and Wazeter, 2009). Justice is important for how loyalty develops and when the imbalance between what you invest in the form of hard work and what you get back in the form of salary and status is high, the possibility of lower loyalty exists. This seems to be of equal importance for native and immigrant workers, but may be of special importance for immigrants. Accordingly, the SEM-analysis supports the claim that the ERI model can be seen as the more fundamental model enveloping the DCS model with matters both external and internal to the narrow work task domain of the DCS model.

The literature shows that the DCS model has been progressively less apt at explaining populations and types of work diverging from the classic stable, male and homogenous blue-collar work, defined by large worker collectives and big industry and in a context of limited social mobility in societies (see, e.g., Eiken and Saksvik, 2009; Tvedt, Saksvik and Nytrø, 2009). Hence, when the results of the

present study show less support for the DCS model, it is reasonable to look at the existing characteristics of the modern Norwegian food processing industry. Enterprises are typically small to medium sized and must navigate rapidly changing markets. They have increasingly larger shares of female and immigrant workers, together with increasingly lower mean age and seniority, most of which is normally associated with fewer collective worker organizations and adherence to the classic Nordic work model and its tenets of industrial democracy (Emery and Thorsud, 1976; Karasek and Theorell, 1990).

Methodological considerations

The variables in this study were measured using the same method (i.e., self-reports) and the same source (i.e., employees). The dependence on self-reports through questionnaires causes various problems (e.g., Frese, 1985; Frese and Zapf, 1988; Kasl, 1998; Spector, 1992). Mono-method and common-source biases may account for parts of the relationships we found in this study, but we argue that the relative intensity of relationships would still hold although the absolute strength of relationships may have an upward bias.

The relatively small sample size of immigrants created some problems because the observed differences between the groups were seldom large enough to be significant. Further studies with larger samples from more sectors have to be conducted to confirm the findings of this study.

It was not the intention of this study to compare the two work environment models of Karasek and Siegrist. We did not, for example, include the demand items from the Siegrist battery. We saw, however, that there was a great overlap between the demand items of Karasek and Siegrist with almost identical formulations on some occasions. It is, thus, difficult to compare such close scales, with high correlation between them, in a direct comparison. The contribution of the effort–reward scale was interesting and should be taken into consideration in future studies.

A word of caution is necessary here in relation to the limitations of SEM analyses. They cannot test the causality of the modeled structures, so the directions of relationships given in the models cannot be taken for granted. Here the present study suffers from being limited to cross-sectional data. However, the use of longitudinal data should not be regarded as the only blanket solution, both necessary and sufficient, as simply ordering variables in time does not in itself

guarantee conclusions regarding causation to be reached in non-experimental studies (Shrout and Bolger, 2002).

Conclusion

In this study we found that the work identity of immigrant employees deviates from native employees. It is dependent upon the personal ambitions of the immigrants, measured as a higher level of over-commitment. This could have been a possible threat to an increased level of stress leading to mental health problems, but commitment to the firm they work in has a compensating effect. Support from leaders and colleagues, control over work, and demands from immediate work tasks in the work situation is the traditional path for native, north-western employees to understand how their work identity affects their health, and this path was confirmed in this study. For both groups effort–reward was an influential factor and may have something to do with the feeling of (in-)justice in the modern work life for all employees. To fully understand work identity and the association with stress and health, other models may have been considered, but it is important to take into consideration the interesting difference between the two samples shown here when interventions to strengthen the work identity and prevent health problems are discussed.

References

Aiken, Leona. S. and Stephen G. West. Multiple Regression: Testing and Interpreting Interactions. Newbury Park, CA.: Sage Publications, 1991.

Arbuckle, James L. and Werner Wothke. Amos 4.0 User's Guide. IL: SmallWaters, 1999.

Bauman, Zygmunt. Liquid Modernity. Cambridge: Polity, 2000.

Breman, Jan. Footloose Labour: Working in India's Informal Economy. Cambridge University Press, 1996.

Browne, Michael W. and Robert Cudeck. "Alternative Ways of Assessing Model Fit." In Testing Structural Equation Models, edited by Kenneth A. Bollen, and Scott J. Long, 136–162. CA: Sage, 1993.

Byrne, Barbara M. Structural Equation Modeling with AMOS. Basic Concepts, Applications, and Programming. Mahwah, NJ: Lawrence Erlbaum, 2001.

Castles, Steven. "Migration and Community Formation under Conditions of Globalization," International Migration Review 36 (4), (2002): 1143–1168.

Cooper, Cary L. The Stress Check: Coping with the Stressors of Life and Work. New York: Prentice Hall, Inc, 1981.

Efron, Bradley. The jackknife, the bootstrap and other resampling plans. (CBMS-NSF Regional Conference Series in Applied Mathematics, No. 38.). PA: Society for Industrial and Applied Mathematics, 1982.

Eiken, Trine and Per Ø. Saksvik. "Temporary Employment as a Risk Factor for Occupational Stress and Health," Policy and Practice in Health and Safety 7 (2), (2009): 75–91.

Emery, Fred E. and Einar Thorsrud. Democracy at Work: The Report of the Norwegian Industrial Democracy Program. Martinus Nijhoff: Leiden, 1976.

Frese, Michael. "Stress at Work and Psychosomatic Complaints: A Causal Interpretation," Journal of Applied Psychology 70 (1985): 314–328.

Frese, Michael and Dieter Zapf. "Methodological Issues in the Study of Work Stress: Objective vs Subjective Measurement and the Question of Longitudinal Studies." In Causes, Coping, and Consequences of Stress at Work, edited by Cary. L. Cooper and Ronald Payne, 375–411. Chichester: Wiley, 1988.

Hammer Tove H., Mahmut Bayazit, and David L.Wazeter, "Union Leadership and Member Attitudes: A Multi-Level Analysis," Journal of Applied Psychology 94 (2), (2009): 392–410.

Hanse, Jan J. and Tomas Engström. "Sense of Coherence and Ill Health Among the Unemployed and Re-employed After Closure of an Assembly Plant," Work and Stress 13 (3), (1999) 204–222.

Heckscher, Charles C. White Collar Blues: Management Loyalties in the Age of Corporate Restructuring. NY: Basic Books, 1995.

Hu, Li-tze and Peter M. Bentler. "Evaluating Model Fit." In Structural Equation Modeling. Concepts, Issues, and Applications, edited by Rick H. Hoyle, 76–99. London: Sage, 1995.

Jenkins, Richard. Social Identity. Taylor & Francis, 2008.

Karasek, Robert. "Job Demands, Job Decision Latitude and Mental Strain: Implications for Job Redesign." Administrative Science Quarterly 24 (1979): 285–307.

Karasek, Robert and Törres Theorell. Healthy Work: Stress, Productivity and the Reconstruction of Working Life. New York: Basic Books, 1990.

Karasek, Robert, Chantal Brisson, Norioto Kawakami, Irene Houtman, Paulien Bongers, and Benjamin Amick. "The Job Content Questionnaire (JCQ): An Instrument for Internationally Comparative Assessments of Psychosocial Job Characteristics." Journal of Occupational Health Psychology 3 (1998): 322–355.

Kasl, Stanislav V. "Measuring Job Stressors and Studying the Health Impact of the Work Environment: An Epidemiologic Commentary," Journal of Occupational Health Psychology 1 (9), (1998): 390–401.

Matthews, Gordon. Global Culture/Individual Identity. Searching for Home in the Global Supermarket. London: Routledge, 2000.

Morawska, Ewa. "The Case of Polish Income-Seeking Travelers to the West," Theory and Society 30 (1), (2001): 47–80.

Mowday, Richard.T., Richard M. Steers, and Lyman W. Porter. "The Measurement of Organizational Commitment," Journal of Vocational Behavior 14 (April 1979): 224–247.

Pal, Suchitra and Saksvik, Per. Ø. "Work-Family Conflict and Psychosocial Work Environment Stressors as Predictors of Job Stress in a Cross Cultural Study," International Journal of Stress Management 15 (1), (2008): 22–42.

Sennett, Richard. The Corrosion of Character. New York: W.W. Norton & Company, 1998.

Siegrist, Johannes. "Adverse Health Effects of High-Effort/Low-Reward Conditions," Journal of Occupational Health Psychology 1 (1), (1996): 27–41.

Shrout, Patrick. E. and Neill Bolger. "Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations," Psychological Methods 7 (4) (Dec 2002): 422–445.

Shumaker, Sally A. and Susan M. Czajkowski. Social Support and Cardiovascular Disease. New York: Plenum Press. 1994.

Spector, Phil. E. "A Consideration of the Validity and Meaning of Self-Report Measures of Job Conditions," In International Review of Industrial and Organizational Psychology, edited by Cary L. Cooper and Ivan. T. Robertson, 123–151. Chichester: Wiley England, 1992.

Tvedt, Sturle. D., Per Ø. Saksvik, and Kjell Nytrø. "Healthy Organizational Change Processes as a Prerequisite for a Good Psychological Work Environment," Work and Stress 23 (1) (2009): 80–98.

Wallace, Claire and Dariusz Stola, editors, Patterns of Migration in Central Europe. New York: Palgrave Macmillan, 2002.

Zeytinoglu, Iski Urla, editor, Flexible Work Arrangements: Conceptualizations and International Experiences. New York: Kluwer Law International, 2002.