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Working Conditions, Absence and Gender - a Multilevel Study

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Abstract

In this paper we use data that combines employment records with employee survey responses to study to what extent psychosocial working conditions, measured at the work group level, relate to individual short-term and long-term sick leave. In order to take interdependencies of workers and work groups into consideration we use multilevel modeling as our modeling strategy. Our results suggest that in order to reduce the number of spells of short-term sick leave (shirking), employers should increase the worker's job autonomy. This is particularly important for male workers. In addition, increasing work group cohesion is important in order to reduce the number of women being on long-term sick leave.

Keywords: Working conditions, absence, gender

JEL classification: J28, J81

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1 Introduction

Due to payments of sick leave benefits, productivity losses and the cost of finding temporary staff, worker absence is a costly phenomenon for firms and organizations. These high costs motivate continuous efforts to better understand the causes and determinants of worker absence. Since employers can, at least partially, control the working conditions of their employees, establishing what working conditions that correlate with absence may help firms and organizations reduce costs. If the determinants of short-term and long-term absence differ from each other, the choice of what working conditions to improve depend on the type of absence the employer wants to address. Moreover, if the relation between working conditions and absence varies with gender the expected outcomes of work environment improvements depend crucially on the gender composition of the group. The aim of this paper is to investigate how psychosocial working conditions relate to short-term and long-term sickness absence. Our purpose is also to investigate whether these relations vary with gender.

In literature regarding absence, absence is sometimes conceptualized as a daily choice process. The decision of attending work is based on a comparison between the utility of attending work and the utility of non-work activities. The outcome of this choice is influenced by a number of different factors, including the physical and psychosocial environment at work. Workers at the same work place share to a large extent the same organizational, physical and psychosocial characteristics. Differences in these characteristics are believed to cause variations in absence rates among employees across firms and organizational units. Workers experiencing poor working conditions are more likely to be absent than workers whose working conditions are of higher quality. The working environment is thought to have an effect on worker absence in primarily two ways (Ose 2005). Workers facing a poor working environment may deliberately try to minimize the time they are exposed to hazards at the work place by simply avoiding going to work, i.e. shirking. On the other hand, a poor working environment could

increase the likelihood of becoming injured at work and/or of experiencing deteriorating health, thus leading to increased sickness absence.

There is a large strand of literature examining potential relationships between absence and various working conditions, e.g. physical environment (Ose 2005; Trinkoff et al. 2001), organizational structure (Marklund et al. 2007), absence culture (Xie and Johns 2000; Drago and Wooden 1992), demographic composition (Mastekaasa 2005), human relations and quality of management (Niedhammer et al. 2008). Results from previous empirical studies suggest that social support from co-workers and/or management, the quality of the physical environment at work and job characteristics, such as work load, flexibility and control, are predictors of worker absence (see Alexanderson and Norlund (2003) for an extensive inter-disciplinary review). Some working conditions are understood to have a direct impact on individual absence, e.g. dangerous work tasks that increase the probability of getting injured. Other working conditions are perceived to have indirect effects on worker health and subsequent sickness absence through their link to work related stress (Karasek 1979; Palmer et al. 2001). Previous research also indicate that men's and women's absence relate in different ways to the same adverse working conditions (Messing et al. 1998; Väänänen et al. 2003).

We use data that combines employment records with employee survey responses to study to what extent psychosocial working conditions, measured at the work group level, relate to individual short-term and long-term sick leave. In order to take interdependencies of workers and work groups into consideration we use multi-level modeling as our modeling strategy. Our paper contributes to the existing literature on sickness absence and working conditions in several ways. In contrast to many previous studies in this field our study is based on employer-reported absence rather than self-reported absence. Moreover, we use group-level variables instead of individual-level variables to reflect the working conditions of interest. The analysis is based on data from two evaluations periods rather than only one and men and women are analysed both together and separately. Finally, the use of multilevel models and random intercepts deals with potential interdependencies

between workers and between work groups as well as unobserved heterogeneities in the dependent variables across work groups and work places.

Our results indicate that job autonomy is negatively related to the number of spells of short-term absence. Furthermore, we find a negative relationship between cohesion and the probability of long-term sick leave. When we separate the samples over gender we find that men's short-term sick leave is more sensitive to the degree of job autonomy in the group. Moreover, cohesion is a predictor of long-term sick leave for women, but not for men.

The rest of the paper is organized as follows: Section 2 contains the theoretical motivations behind the study. Data and empirical strategy is presented in Section 3. The results are reported in Section 4 and Section 5 contains discussion and conclusions.

2 Theoretical motivations

Before discussing the theoretical motivations in our study we would like to make some clarifications regarding the terminology used. The general term *absence* includes all scheduled work time that the worker spends off work. *Sickness absence* on the other hand is only the subset of absence that is associated with sickness. Most theories regarding absence do not address sickness absence in particular but relate to the more general concept absence. The majority of the theories presented in this chapter are theories regarding absence as a whole. In the remaining chapters of the text however, we focus on sickness absence in particular, and irrespective of what term is used (absence or sickness absence) we always refer to sickness absence. When discussing absence a distinction is often made between *involuntary* and *voluntary* absence. Involuntary absence signifies the type of absence that relates to factors beyond individual control and is typically thought to be caused by health related factors. Voluntary absence on the other hand denotes the type of absence that the individual is free to choose (Brown and Session 1996).

2.1 Working conditions and absence

Theories regarding absence in general and the link between working conditions and absence in particular have emerged in several disciplines, such as applied psychology, management and organizational theory. Quite often these theories are induced from observations in empirical studies. An early attempt to conceptualize the individual absence decision process based on results from empirical studies was made by Steers and Rhodes (1978). In their model of employee attendance they suggest that the worker's attendance decision is a combination of two components: the individual's *ability* to go to work and his/her *motivation*. As the word indicates ability includes all factors that affect whether the individual is able to go to work or not such as sickness, accidents, transportation and family situation. The individual's motivation to go to work on the other hand comprises internal as well as external factors that in one way or another influence the decision of going to work, given that the individual has the ability to go to work. Some examples are individual work ethics, job satisfaction, job expectations, physical and mental working conditions, work group norms and market conditions. What factors are important to individual ability and motivation and how these variables affect individual work attendance, in turn, depends on personal characteristics such as age, sex, tenure etc.

Since the seminal paper by Steers and Rhodes theories regarding the forces behind motivation and ability have emerged. The social theory of absence (Chadwick-Jones et al. 1982; Nicholson and Johns 1985) suggests that human relations are important for the individual's motivation to attend work. It is emphasized that the individual absence decision is influenced by the behavior and beliefs of others. Co-workers have mutual obligations to each other and to their supervisors, which in turn influences their motivation to attend work. Social considerations are taken into account whenever absence decisions are made. Various work stress models (Karasek 1979; Karasek and Theorell 1990) have developed to explain the link between stress-related hazards and various individual health outcomes. Stressful experiences at work have been associated with increased health risks thus affecting the individual's ability to attend work. Examples of

potential stress hazards are organizational changes, high demands in combination with lack of control and lack of social support (Palmer et al. 2001).

2.2 Working conditions and absence in economic theory

In economic theory, absence is regarded as the outcome of a daily decision between labor and leisure. The decision is based on a comparison between the utility of attending work and the utility of non-work activities. Absence can be seen as a mean for the employee to adjust his/her labor supply in response to imperfect market conditions. If, for example, the contracted working hours are greater than what is desired by the individual, there are incentives to be absent from work (Allen 1981). Early economic models only regard monetary values when modeling absence. Typically, wages and non-work income are included in the models. In later labor supply models, non-monetary factors, e.g. health status (Barmby et al. 1994), working conditions (Ose 2005) and norms (Lindbeck and Persson 2008, have also been included. Non-monetary factors are assumed to affect the absence decision through their impact on either the employee's utility of working or the utility of not attending work.

Ose (2005) contributes to the existing body of literature on worker absence by modifying the efficiency wage model, first developed by Shapiro and Stiglitz (1984), to also include working conditions. In her extended model it is possible to distinguish between voluntary and involuntary absence. Workers choose a job that offers a certain bundle of both pecuniary and non-pecuniary rewards. Non-pecuniary rewards capture the physical and psychosocial conditions of the work environment and can be either positive or negative depending on the quality of the environment. Once at work, the worker can choose between a positive level of effort or no effort at all, i.e. shirking. The worker will choose the effort level that maximizes his/her (expected) lifetime utility. As long as the return from the bundle of both pecuniary and non-pecuniary rewards exceeds the return of shirking no shirking will take place. The derived non-shirking condition in Ose's model is similar to that in the original model.[1] Since the occurrence of adverse working

[1] Shirking is negatively related to wage, quality of working conditions, the probability of being caught and fired due to shirking, the unemployment rate and the discount rate and positively related to required effort,

conditions affects the worker's utility of working, the worse the working conditions, the higher the value of leisure. When facing poor working conditions a higher wage is required to sustain the level of labor supply. Thus, the worker needs to be compensated in monetary terms in order not to shirk. The occurrence of adverse working conditions is also assumed to have a direct negative effect on the worker's health status. The model thus makes a distinction between the effects of adverse working conditions on shirking, voluntary absence, and on health related absence, involuntary absence. One of the main predictions of the model is that shirking only occurs when the wage rate not fully compensates the worker for the existence of undesirable job attributes. Sickness absence on the other hand will always occur in the presence of adverse working conditions, regardless of if the worker is compensated economically or not.

2.3 Working conditions, absence and gender

To our knowledge, there are no formalized theories regarding gender differences in the relation between working conditions and sickness absence. However, based on empirical findings, there are some suggestions as to why the observed gender differences exist. One way to understand the disparity between men and women is to relate gender differences in sickness absence to the way men and women *cope* with adverse working conditions (Mastekaasa 2000, Väänänen et al. 2003, Messing 1998). This is sometimes referred to as the differences-in-vulnerability hypothesis. According to this hypothesis men and women have unique sources of stress (Kohler et al. 2006; Hendrix et al. 1998) and are on average different in how vulnerable they are to adverse working conditions. Men and women may adopt different coping strategies, such as being absent from work, when facing adverse working conditions. They may for instance have different thresholds for calling in sick or for working when feeling ill. The observed differences can in term be explained by a combination of biological, psychological and socio-cultural factors. For instance, if women, on average, are faced with a larger burden of combining both family and work, women are likely to have a higher level of "life stress" and thus to be more vulnerable to work related stress.

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non-working benefits and the probability of being separated from one's employment, e.g. due to the closing of a firm or the character of one employment contract.

3 Data and methodology

3.1 Data and sample construction

The analysis in this paper is based on two different sets of data: one sample for the time period 2005/2006 and one for 2007/2008. For each time period the sample is a combination of employer-reported data and survey data. Data from the two sources are matched together and all individuals in the final samples have variables from both data sources. Variables from the employment records are individual-level variables whereas data stemming from the survey is aggregated to the work group level. In the following sections we will describe the data sources and how the samples were constructed.

Employer-reported data

The employer-reported data holds information about individuals working for and receiving monthly salary from a middle-sized Swedish municipality. It contains socio-demographic variables, employment variables and variables reflecting different kinds of work absence.[2] Two different samples covering the period October 1st to September 30th in 2005/2006 and 2007/2008, respectively, were collected. Both samples are restricted only to include individuals that were employed over an entire time period (during at least one of the time periods).[3] Furthermore, politicians, individuals in labor market programs and individuals having management positions, e.g. school principals and unit managers are excluded from the analysis.[4]

Survey data

[2] The data includes age, gender, residential area, wage, employment type, rate of employment, sickness benefits, parental leave, parental leave due to sick children, educational leave and leave of absence.

[3] The reason only individuals that had worked during the entire year are included in our sample is that we want to be able to compare the number of absence spells across individuals.

[4] Politicians did not participate in the survey. Individuals in labor market programs are excluded since they are employed on other premises than the rest of the labor force. Due to how the data is organized supervisors do not belong to the work groups..

The survey was carried out in November 2005 and 2007, respectively.[5] All permanent workers as well as substitute workers that had been working in the same work group for at least three months prior to the survey were asked to individually answer the questionnaire. The questions mainly concerned leadership, work group performance, work group relations and physical and mental working conditions. All answers were anonymous and collected over the web or via mail. The overall response rates were 82 and 83 per cent, respectively.

Sample construction

The organizational structure of the employer-reported data allows us to identify work place as well as work group affiliation for each worker. In addition, even though the surveys were answered anonymously, work group affiliation for the respondents was known in advance and coincides with the organizational structure in the employer-reported data. In order to match data from the two sources we aggregate the anonymous survey answers on the work group level. This enables matching of employer-reported data and survey data on the work group level. Our final samples contain individual level variables regarding socio-demographics, employment and absence and group level variables concerning leadership, work group performance, work group relations and physical and mental working conditions. The final sample for 2005/2006 contains a total of 6348 workers organized into 604 work groups at 280 work places. The 2007/2008 sample holds a total of 6858 workers organized into 677 work groups at 319 work places. A work place is defined as a physical establishment, e.g., a school or a nursing home. Larger work places typically consist of workers with different types of occupations and different responsibilities. Work places are sub divided into several work groups.[6] A work group is defined as a group of workers that have frequent contact and a common task to perform. An example of a work group is a team of teachers that are responsible for certain classes at a particular school. The work groups in our samples typically are homogenous regarding types of job and the level of responsibilities.

[5] The survey was performed on behalf of Örebro municipality, however, it was organized and carried out by Synovate Sweden, a company specializing in conducting surveys.

[6] For small work places, work place and work group coincides.

Non-response and missing data

There are several sources of missing data in our samples. In the following we will discuss these sources and how the missing data may potentially bias our results. We will further present ways in which we have dealt with the problem of missing data.

For some of the workers we were not able to find corresponding work groups in the employment records and in the survey. This problem is mainly due to re-organizations in the municipality prior to the survey and to lack of updates in the employer reported data. Workers for whom we cannot find work groups in both data sources are excluded from the samples. In combination with the exclusion of certain groups of employees previously mentioned (politicians, individuals in labor market programs and supervisors) 2988 individuals in the employment records and 2882 respondents in the survey data in the 2005/2006 sample are not included in the analysis. The corresponding figures in the 2007/2008 sample are 2338 individuals and 2306 respondents. If the loss of observations is systematic in terms of sickness absence in relation to survey responses the opportunity to generalize our results is hampered. Unfortunately, since the survey responses are anonymous, we are not able to investigate the non-response in the survey data. For the employment records we find some differences in terms of absence and socio-demographic variables between the whole population of workers and the individuals included in the final samples.[7]

In addition to whole work groups missing from the samples there are also individual workers missing. In this study aggregated survey responses are used to proxy for working conditions within work groups. The surveys were answered anonymously and therefore we cannot perfectly match respondents in the survey with data from the employment records. There are individuals present in the employment records that did not participate in the survey and vice versa. There are at least two types of discrepancies that could potentially bias our results. To begin with there are individuals that have answered the survey but that are not present in the employment records. This group consists of

[7] Comparisons between the final samples and the eligible populations are presented in Appendix 2.

individuals that for some reason left their job during the evaluation period.[8] Omitting these individuals from our samples causes a problem if leaving one's job is correlated with the survey response. For example, a worker might have left a work group because he/she was not satisfied with the job situation. Dissatisfaction with the job situation could potentially have resulted in more critical survey responses as compared to answers of workers that stayed in the work group. On the other hand, the respondent may not have felt a need to express his/her negative opinion since he/she was leaving in the near future anyway. In either case, restricting our analyses only to include individuals that have worked the entire evaluation period means that we may introduce measurement error in the working condition variables. Individuals present in the employment records but who did not answer the survey, either by choice or because of non-attendance at the time of the survey, is another problem. The main concern is that non-participation could be correlated with the variables of interest, i.e. sickness absence and opinions regarding working conditions. Such correlation is likely to occur if, for instance, the non-respondents did not consider their working conditions to be a problem and therefore did not care to participate in the survey or if the non-respondents were particularly dissatisfied with their work environment but were reluctant to express their negative opinions. Regardless, non-response might bias our results. The extent of this particular problem is controlled for in two ways. Firstly, individuals from the register data that were not present at the time of the survey, due to sick leave, parental leave or other forms of absence, were removed from the sample. Secondly, we remove work groups with a low relative number of survey respondents.[9] Even if the overall response rate was relatively high there are still particular work groups with low response rates.[10]

3.2 Variables

Dependent variables

We use two dependent variables in our analysis: a count variable indicating the yearly number of short-term spells of sick leave (*Short-term sick leave*) and a binary variable

[8] They either retired, quit working for the municipality, changed to another work group or their temporary contract expired.

[9] Individuals in groups with a response rate lower than 0.5 were excluded from the regressions.

[10] Approximately 10 per cent of all work groups had a response rate below 0.5.

that indicates if the worker has any spells of long-term sick leave during the year (*Long-term sick leave*). Short-term spells are defined as spells shorter than eight days and long-term spells are defined as spells that are eight days or longer. Worth noting is that for sick leave periods shorter than eight days no physician certificate is required. Hence, it is possible that some of the reported short-term spells are not caused by illness (Brown and Session 1996). Ose (2005) and Iverson and Deery (2001) argue that short-term sickness absence can be used as a proxy for shirking. Long-term sickness absence on the other hand, which requires physician certificates, is associated with illness or injury.

The distributions of short- and long-term spells of sick leave are shown in *Figure 1* and *2* and *Figure 3* and *4*, respectively. The distribution of short-term spells resembles a Poisson distribution. Approximately 40 per cent of all workers have no spells of short-term sick leave, while quite a good third of all workers had two short-term spells or more.

Fig. 1: Short-term sick leave in 2005

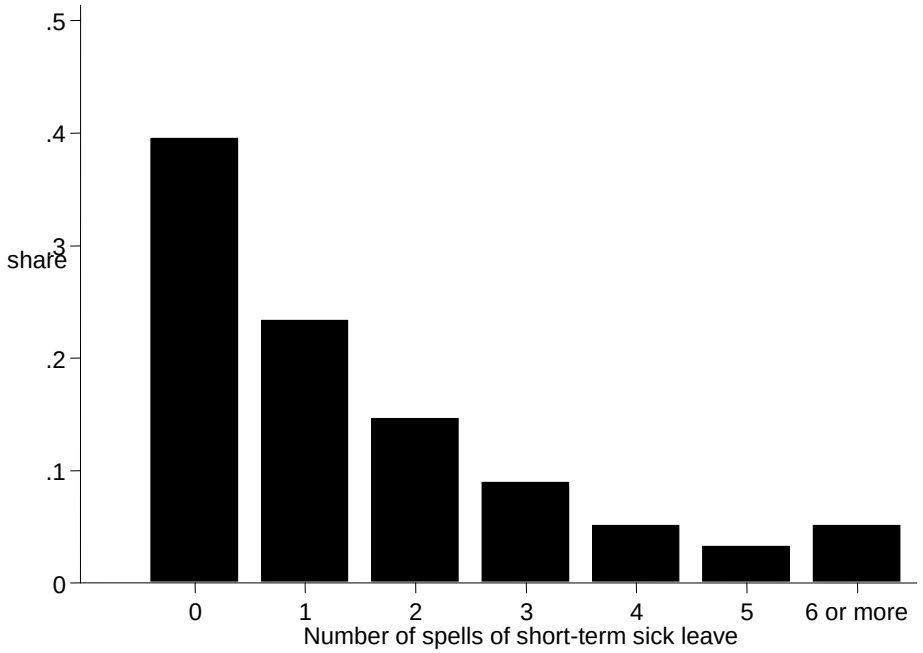
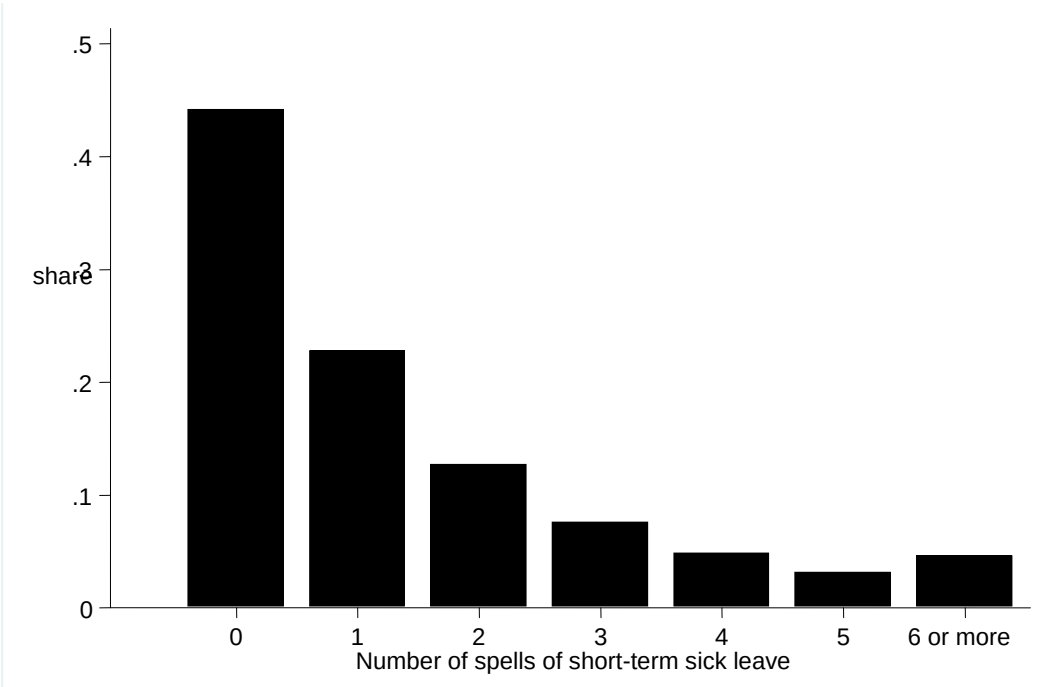


Fig. 2: Short-term sick leave in 2007



The distribution of long-term spells, found in *Figure 3* and *4*, is highly skewed to the left. A vast majority of all individuals, more than three quarters, have no spells of long-term sick leave. Less than five per cent have more than one long-term spell. Given the skewed distribution of the spells of long-term sick leave, we will use a binary variable to indicate long-term sick leave. This variable (*Long-term sick leave*) takes the value 1 if the worker has any spells of long-term sick leave and 0 if not.

Fig. 3: Number of spells of long-term sick leave in 2005

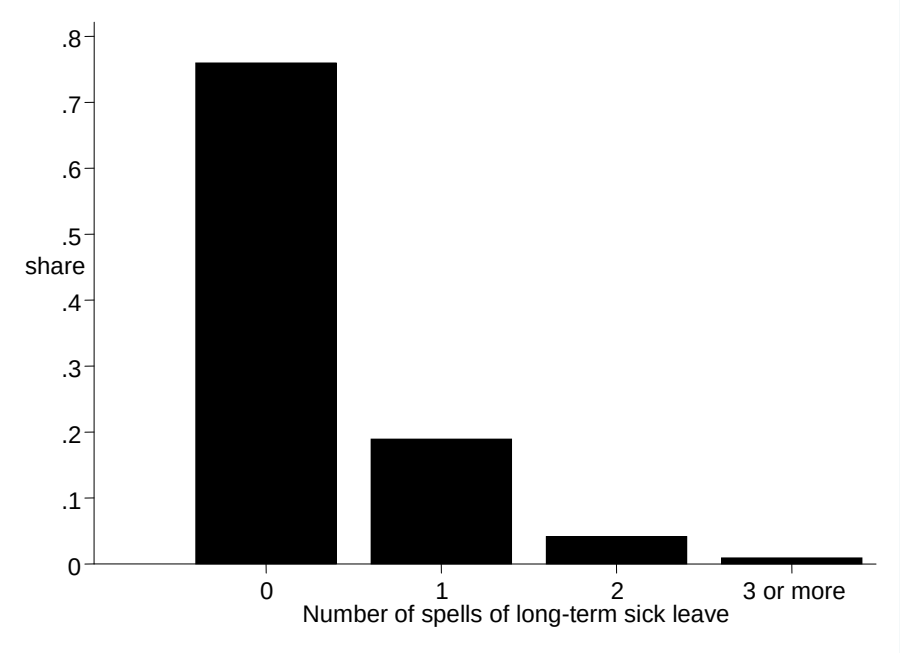
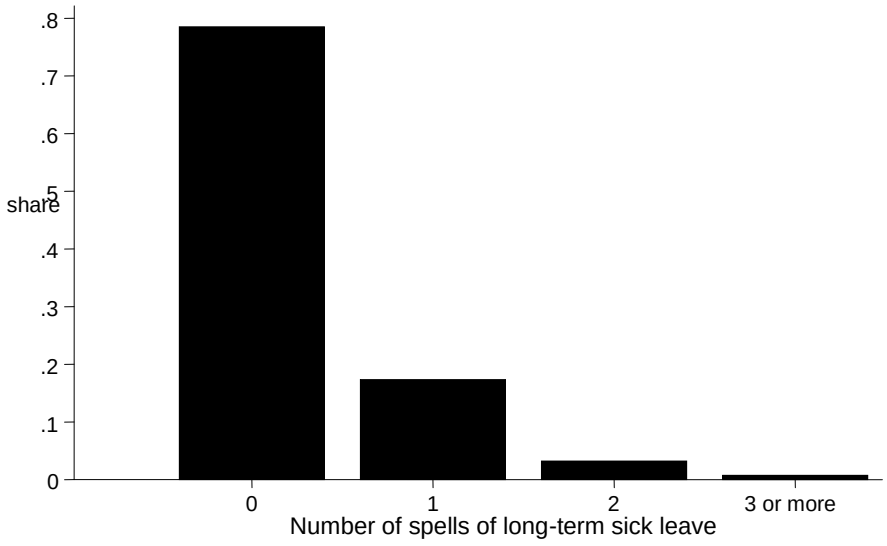


Fig. 4 Number of spells of long-term sick leave in 2007



In many previous studies the measure of individual sickness absence is self-reported. In our study the variables reflecting individual sickness absence is based on employer reported data. One advantage with this is that employment records are not likely to contain measurement error to the same extent as do self-reported data. Comparisons between self-reported absence and firm-registered absence show that it is difficult for respondents to remember their absence even in relatively short periods of time (Severens et al. 2000).

Working conditions

Earlier empirical studies have found social support, stress related factors and physical environment to be important determinants of individual absence. The variables reflecting these working conditions in our study are *Cohesion* (among co-workers), *Trust* (towards supervisor), *Work load*, *Physical environment* and *Job autonomy*. The survey questions underlying these variables are[11]:

Cohesion: "We cooperate well within my work group/unit"

[11] The original Swedish questions can be found in Appendix 1.

Trust: “I trust my closest supervisor”
Physical environment: “I am satisfied with the physical environment”
Work load: “I seldom have too much to do”, “There are times when I have too much to do but in between it is quieter”, “I always have too much to do. It is never quiet”
Job autonomy: “I can prioritize among my duties/tasks.”

The variables are created by aggregating individual survey responses over work groups. Most answers in the survey follow a 5 point Likert scale, where 1 means “I don’t agree” and 5 means “I fully agree”. We define respondents as agreeing with the statement if they answer 4 or 5 to the question of interest. The variables in our estimations correspond to the share of respondents in the work group that agree with the statement in question. In the question underlying the variable Work load the respondents are asked to choose one of the above written statements. The variable Work load corresponds to the share of respondents in the work group that choose the alternative: “I always have too much to do. It is never quiet”.

Given that the questionnaires were answered anonymously, and we cannot link individuals to their survey responses, aggregation over work groups is necessary. Due to the desire of respondents to present socially acceptable answers, self-reported measures are believed to be biased. The apprehension is that individual answers may reflect particular response styles and personal traits rather than actual conditions (Semmer et al. 1996). Expert reviews conducted at higher unit levels have been suggested to yield better estimates of actual working conditions than individual-level, self-reported, measures (Roelen et al. 2008). However, in the absence of external assessments, work group or work place aggregates have been put forth as potential means to proxy for objective evaluations of the working conditions (de Jonge et al. 1999; Alexanderson and Norlund 2003; Christensen et al. 2005). Frese and Zapf (1988) argue that group aggregates are more objective measures than individual answers, since they reduce the influence of idiosyncratic perceptions and illusionary answers. There is potentially another gain from using aggregates rather than individual answers. When cross sectional data is used there is always a risk of reversed causality between outcome variables and predictors. In our

study workers who are frequently absent may be more likely to justify their behavior by reporting poor working conditions. This would cause the relationship between measures of absence and working conditions to be endogenous. This is an obvious problem when studying the relationship between individual responses and individual absence. However, when using aggregate measures of working conditions, which reduces the weight of individual perceptions, the problem of reversed causality is likely to be less severe as compared to when using only individual responses.

Hypotheses

Health related absence (involuntary absence) and shirking[12] (voluntary absence) are both expected to increase in the case of degenerated working conditions (Ose 2005). This is due to the fact that adverse working conditions affect both the incentive to shirk and the probability of becoming ill and/or injured. As discussed by Steers and Rhodes (1978) shirking relates to the motivation of attending work while illness or injury concerns the ability of working. As a consequence, the mechanisms through which adverse working conditions affect short-term and long-term absence are likely to differ. In the following we briefly discuss how the working conditions included in our study are believed to affect individual sickness absence.

The variables Cohesion and Trust reflect the quality of the interactions that take place within a work group and between a group and its superior(s). They measure the degree of loyalty and social support and may also serve as indicators of the presence of work place conflicts. As pointed out by Johns and Nicholson (1985) sickness absence is likely to be lower in groups where workers have a strong sense of mutual obligation (strong cohesion) and/or a strong sense of obligation towards the organization in which they work (high trust). To be absent from work implies inflicting and increasing the work burden for others. Therefore, in groups with strong cohesion and/or high trust workers become subject to internal and/or external pressure to attend work. In other words, individuals in work groups with high cohesion and high trust are expected to have a

[12] Adverse working conditions are only expected to yield increased shirking if the worker is not fully compensated in terms of higher wages. In our study, we do not believe workers to be compensated in the presence of adverse working conditions.

higher motivation to attend work (not to shirk). Consequently our expectation is that the variables *Cohesion* and *Trust* correlate negatively with short-term sick leave. In the long run high social support serves as a buffer against work related stress and subsequent illness (Unden 1996). Low social support, on the other hand, may indicate the presence of a conflict in the work group which in turn can reduce individual well-being and lead to health related absence. We expect the variables *Cohesion* and *Trust* to be negatively correlated with long-term sick leave.

Job autonomy is likely to be negatively related to both shirking and sickness absence. Jobs with high job autonomy are likely to be more varied and stimulating than jobs with low job-autonomy, thus leading to job-satisfaction and higher work attendance (Böckerman and Ilmakunnas 2008). Furthermore, high job autonomy implies that the worker can prioritize between tasks. This in turn is likely to help the worker to cope with stressful situations and thus to reduce the risk of getting sick (Karasek 1979). We expect the variable *Job autonomy* to be negatively correlated with both short- and long-term sick leave.

A heavy work load implies that the worker has to put in more effort into his/her work. As predicted by the efficiency-wage model (and the extended version) higher effort is associated with higher levels of shirking. In the long run, an excessive work load may cause stress levels to rise and thus increase health-related absence. We expect the variable *Work load* to be negatively correlated with both short- and long-term sick leave.

Poor physical working conditions, e.g. heavy and/or dangerous tasks, noisy, confined or worn down facilities, increase the risk of becoming sick and/or injured. Moreover, a poor physical work environment increases the level of risk associated with work and is therefore expected to increase the insensitive to shirk (Ose 2005). Thus, we expect the variable *Physical environment* to be negatively correlated with both short- and long-term sick leave.

Controls

In addition to the dependent variables and the variables reflecting working conditions the data also contains several other variables that may potentially affect the individual sick leave decision. These variables consist of demographic as well as work place characteristics and are included as controls in the regressions. The variables are gender, age, monthly salary, type of contract[13], rate of employment[14], residential area[15], and occupation[16]. By including variables indicating the residential area of the individual we hope to control for some of the variations stemming from differences in socio-economic characteristics, e.g. family situation and ethnic background, not included in our analysis.

Descriptive statistics

Descriptive statistics are found in Table 1.

[13] The variable takes the value 1 if the worker has a permanent contract and value 0 if the contract is temporary.

[14] The variable rate of employment is a continuous variable that takes on values between 0 and 1. It indicates the rate at which the employee works e.g. full time takes on the value 1.00.

[15] Dummy variables are created for concrete suburb, block of flats, residential district and living outside city limits.

[16] 18 different occupation categories are used in the analysis.

Table 1: Descriptive statistics

Variables	2005 Mean (Std)			2007 Mean (Std)		
	All	**Men**	**Women**	**All**	**Men**	**Women**
Dependent variable						
Short-term sick leave	1.41	1.04	1.51	1.57	1.17	1.64
	(1.96)	(1.71)	(2.01)	(2.07)	(1.92)	(2.09)
Long-term sick leave	0.24	0.15	0.27	0.21	0.13	0.24
Working condition						
Cohesion	0.70	0.69	0.70	0.71	0.70	0.72
	(0.25)	(0.23)	(0.25)	(0.22)	(0.24)	(0.21)
Trust	0.71	0.71	0.70	0.73	0.70	0.74
	(0.25)	(0.24)	(0.25)	(0.23)	(0.22)	(0.22)
Work load	0.24	0.26	0.24	0.22	0.23	0.21
	(0.21)	(0.21)	(0.20)	(0.20)	(0.20)	(0.19)
Physical environment	0.46	0.50	0.45	0.49	0.51	0.49
	(0.25)	(0.26)	(0.25)	(0.23)	(0.24)	(0.23)
Job autonomy	0.50	0.56	0.48	0.56	0.61	0.55
	(0.23)	(0.21)	(0.23)	(0.21)	(0.20)	(0.21)
Controls						
Gender (1 = female)	0.78			0.78		
Age	46.11	46.37	46.04	45.21	45.55	45.12
	(10.79)	(10.90)	(10.76)	(10.79)	(10.94)	(10.93)
Monthly salary[17]	20157	21790	19704	20652	22009	20269
	(3722)	(4315)	(3403)	(3899)	(4436)	(3644)
Rate of employment	0.93	0.97	0.92	0.94	0.97	0.93
	(0.13)	(0.10)	(0.13)	(0.12)	(0.09)	(0.13)
Type of contract (1= permanent)	0.93	0.91	0.92	0.91	0.90	0.91
	(0.26)	(0.28)	(0.26)	(0.26)	(0.30)	(0.28)
Work group size	10.64			10.16		
	(7.87)			(7.65)		
Number of observations	6 386	1384	5002	6858	1509	5349

The average number of spells of short-term sick leave has increased by more than 10 per cent between the two years, while the share of individuals that have at least one spell of long-term sick leave decreased by the same proportion.[18] Female workers have on

[17] Nominal values.

[18] These trends are not only true for our samples but also for the original employer reported data sets.

average both more short-term spells and a higher rate of long-term sick leave than do male workers

Since the variables indicating working conditions are group-level variables the interpretations of the means are somewhat different than for individual-level variables. For example, Cohesion = 0.70 implies that an individual in our sample on average works in a work group where 70 per cent of the workers agree with the survey question regarding cohesion. For most working conditions the mean value is fairly stable over time. However, for the variable *Job autonomy* the mean value is somewhat higher in 2007, indicating that perceived job autonomy is higher in the 2007 sample than the 2005 Sample. The mean values for men and women are in general also rather similar. Though, as with the comparison over time some differences can be found regarding the variable *Job autonomy*. Men work (in both years) on average in groups where the perceived job autonomy is higher compared to groups where women on average work.

Finally a few words regarding the controls included in our regressions. The municipality primarily engages in typically female dominated professions, e.g., nursing and teaching. The share of female workers is accordingly as high as 78 per cent in both years.[19] The average monthly salary is relatively low as compared to the private sector and other parts of the public sector. It is, however, similar to the worker average in other Swedish municipalities. The average age in our samples is a year lower in 2007 as compared to in 2005.[20] We believe that this is due to an increasing amount of retirements. The descriptive statistics also reveal some gender differentials characterizing our data. First of all the average monthly salary is lower for women than for men. In both samples the average female salary is approximately only 90 per cent of the average male salary. Part of these differences may reflect a pure gender effect. However, we believe that this mainly reflects that men and women work in different occupations where male dominated

[19] A majority of all work groups in our samples are female dominated. In 2005 472 work groups out of 603 had a share of female workers that was above 60 percent. The corresponding numbers in 2007 were 527 out of 677.

[20] This is not only the case in our samples but holds for the overall average for municipality workers.

occupations typically have higher salaries. Secondly the rate of employment is lower for women than for men.

3.3 Empirical strategy

The data used in our study follows a hierarchical structure where individuals are nested within work groups and work groups are nested within work places. In other words, interdependencies (may) exist between individuals in the same work group and between work groups within the same work place. Our data also contains both group-level variables and individual-level variables. The potential interdependencies as well as inclusion of variables at different levels call for the use of so called hierarchical or multi-level modeling. In order to control for omitted variables and unobserved heterogeneity in sickness absence across work groups and work places we include work place and work group random intercepts in our models.

A three-level random intercept Poisson model is used to estimate the relationship between *Short-term sick leave* and working conditions. The model is given by:

$$\begin{aligned}\mu_{iga} &= E(y_{iga} \mid \mathbf{x}_{iga}, \mathbf{z}_{ga}, \zeta_g, \zeta_a) \\ &= \exp(\beta_1 + \zeta_{ga} + \zeta_a) \exp(\mathbf{x}_{iga}\boldsymbol{\beta} + \mathbf{z}_{iga}\boldsymbol{\delta}) \qquad (1)\end{aligned}$$

where y_{iga} is the dependent variable measuring the yearly number of spells of short-term sick leave for individual *i* in work group *g* at work place *a*. $\mathbf{x}_{iga}$ is a vector containing individual level covariates while $\mathbf{z}_{ga}$ is a vector containing work group level covariates. ζ_{ga} represents the random intercept varying over work groups and ζ_a is the random intercept varying over work places.

A three-level random intercept Logit model is used to estimate the relationship between *Long-term sick leave* and working conditions. The model is given by:

$$\text{logit}\{\Pr(y_{iga}=1 \mid \mathbf{x}_{iga}, \mathbf{z}_{ga}, \gamma_g, \gamma_a)\} = (\alpha_1 + \gamma_{ga} + \gamma_a) + \mathbf{x}_{iga}\boldsymbol{\alpha} + \mathbf{z}_{iga}\boldsymbol{\mu} \qquad (2)$$

where y_{iga} takes the value 1 if the individual *i* in work group *g* at work place *a* has been on long-term sick leave. $\mathbf{x}_{iga}$ is a vector containing individual level covariates while $\mathbf{z}_{ga}$ is a vector containing work group level covariates. γ_{ga} represents the random intercept varying over work groups and γ_a is the random intercept varying over work places.

In order to check whether the effects of psychosocial working conditions vary with gender we estimate the models using three different sets of samples: a full sample including men and women, a sample only including men and a sample only including women.

4 Results

Results from our baseline regressions regarding short-term and long-term sick leave are presented in *Table 2* and *Table 3*, respectively. Results based on the full sample, where coefficients are assumed to be constant over gender, are found in columns 1 and 4. In columns 2 and 5 regressions based on the male samples are presented and column 3 and 6 provides the results for the female samples. Sensitivity analyses are discussed in section 4.2 and corresponding regression results are found in Appendix 3.

4.1 Baseline regressions

Table 2: Regression results short-term sickness

	Short-term sick leave					
	2005			2007		
	All	Men	Women	All	Men	Women
Working conditions						
Cohesion	-0.15	-0.07	-0.14	-0.04	0.07	-0.07
	(0.10)	(0.21)	(0.09)	(0.09)	(0.21)	(0.10)
Trust	-0.02	-0.08	-0.02	0.05	-0.09	0.05
	(0.09)	(0.21)	(0.09)	(0.09)	(0.20)	(0.09)
Work load	0.03	-0.22	0.10	-0.07	**-0.79*****	0.09
	(0.12)	(0.27)	(0.13)	(0.12)	(0.28)	(0.13)
Physical environment	-0,00	-0,02	-0,06	-0,15	-0,07	-0,15
	(0.10)	(0.21)	(0.10)	(0.09)	(0.23)	(0.10)
Job-autonomy	**-0.26****	**-0.53****	-0.17	**-0.25****	**-0.54****	**-0.20***
	(0.11)	(0.24)	(0.12)	(0.10)	(0.25)	(0.11)
Controls						
Gender (1 = female)	**0.19*****			**0.16*****		
	(0.03)			(0.03)		
Age/10	**-0.17***	-0.15	-0.16	**-0.15*****	**-0.36***	-0.12
	(0.09)	(0.25)	(0.09)	(0.07)	(0.21)	(0.08)
Age square/100	0.01	0.01	0.01	**0.02****	0.03	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
Monthly salary (1000 SEK)	**-0.04*****	**-0.05*****	**-0.04*****	**-0.02*****	**-0.03****	**-0.02*****
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Rate of employment	-0.06	0.37	-0.15	-0.02	0.57	-0.10
	(0.09)	(0.33)	(0.10)	(0.10)	(0.36)	(0.10)
Permanent contract	**-0.20*****	-0.08	**-0.24*****	**-0.20*****	-0.03	**-0.22*****
	(0.04)	(0.11)	(0.04)	(0.03)	(0.11)	(0.04)
Work group size/10	0.05	0.09	0.03	0.03	0.05	0.03
	(0.03)	(0.06)	(0.03)	(0.03)	(0.05)	(0.03)
Residential area dummies	Yes	Yes	Yes	Yes	Yes	Yes
Occupational dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	6 386	1384	5002	6 858	1509	5349

Note: Standard errors are shown in parentheses. (***), (**) and (*) indicate statistical significance at the 1%, 5% and 10 % levels, respectively.

We begin by presenting the results for short-term sick leave found in *Table 2*. Before discussing the variables of main interest we would like to say a few words about the controls included in our regressions. For the full sample we find that the gender coefficient is positive in both 2005 and 2007. Thus women are expected to have a larger number of spells of short-term sick leave as compared to men. Moreover, expected short-term sick leave is increasing with age and decreasing with monthly salary and permanent

contract. We find no effect of rate of employment or of work group size. When running separate regressions for men and women we still find a negative correlation between monthly salary and short-term sick leave. However, the negative relationship between short-term sick leave and type of contract is only found among women. Finally, we find no effect of rate of employment or of work group size.

Only a few of the working conditions have any significant effect on short-term sick leave. The only variable that seems to be of overall importance for the number of days on short-term sick leave is job autonomy. In all but one cases (women 2005) we find a negative correlation between short-term sick leave and job autonomy. This implies that workers in groups that are able to prioritize between their duties, on average, have fewer spells of short-term sick leave, than workers in groups that cannot. The results also show this relation to be stronger for men than for women.[21] The only estimate that is statistically significant for the variable work load is the male estimate in 2007. Contrary to what we expected this effect is negative.[22] Even though most estimates regarding the variable work load are not statistically different from zero it is worth noting that the male estimates are both negative whereas the female estimates are positive. Finally, our results suggest that the variables trust, cohesion and physical environment are not important for the number of spells of short-term sick leave.

[21] The t-test rejects the null-hypothesis that job autonomy coefficient for men and women are equal in 2007, but fails to do so in 2005.

[22] This result contradicts the predictions from the efficiency wage model. The result could potentially imply that male presenteeism increases as a response to increased work load.

Table 3: Regression results long-term sickness

	Long-term sick leave					
	2005			2007		
	All	Men	Women	All	Men	Women
Working conditions						
Cohesion	**-0.31****	-0.05	**-0.38****	**-0.36****	-0.13	**-0.40****
	(0.15)	(0.37)	(0.16)	(0.16)	(0.40)	(0.17)
Trust	-0.01	0.04	-0.08	-0.22	-0.15	-0.23
	(0.14)	(0.37)	(0.15)	(0.15)	(0.38)	(0.16)
Work load	**0.47****	0.39	**0.50****	-0.04	0.17	-0.07
	(0.18)	(0.45)	(0.20)	(0.21)	(0.50)	(0.22)
Physical environment	-0.22	-0.16	-0.22	-0.26	-0.48	-0.23
	(0.15)	(0.44)	(0.17)	(0.17)	(0.44)	(0.18)
Job-autonomy	**-0.30***	-0.42	-0.31	-0.04	-0.29	-0.03
	(0.17)	(0.41)	(0.19)	(0.18)	(0.48)	(0.19)
Controls						
Gender (1 = female)	**0.47*****			**0.57*****		
	(0.09)			(0.10)		
Age/10	-0.34	0.31	-0.40	**-0.58****	-0.78	**-0.50***
	(0.26)	(0.70)	(0.28)	(0.26)	(0.62)	(0.26)
Age square/100	**0.06****	0.01	**0.07****	**0.09*****	**0.12***	**0.08*****
	(0.02)	(0.07)	(0.03)	(0.03)	(0.06)	(0.03)
Monthly salary (1000 SEK)	**-0.05****	**-0.06***	**-0.05****	**-0.04****	**-0.06***	**-0.05****
	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)
Rate of employment	-0.03	-0.45	0.01	0.13	0.63	0.07
	(0.25)	(0.72)	(0.27)	(0.27)	(0.96)	(0.28)
Permanent contract	**0.36*****	0.04	**0.42*****	**0.40*****	**0.66***	**0.35****
	(0.13)	(0.33)	(0.14)	(0.13)	(0.35)	(0.14)
Work group size/10	-0.03	-0.11	-0.02	-0.01	-0.00	-0.01
	(0.04)	(0.07)	(0.04)	(0.04)	(0.07)	(0.04)
Residential area dummies	Yes	Yes	Yes	Yes	Yes	Yes
Occupational dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	6 386	1384	5002	6 858	1509	5349

Note: Standard errors are shown in parentheses. (***), (**) and (*) indicate statistical significance at the 1%, 5% and 10 %levels, respectively.

We now turn to discussing the results regarding long-term sick leave presented in *Table 3*. Before commenting on particular estimates it is worth noting that for the male sample in 2005 the only variable that correlates with long-term sick leave is monthly salary. For this sample no other estimate, neither working condition nor control, is statistically different from zero. Part of this may be explained by the relatively small sample size and the type of dependent variable. The results in *Table 3* show female workers to have a significantly higher probability of long-term sick leave than male workers. For most of

the samples the probability of long-term sick leave decreases with monthly salary while it increases with age and permanent contract. Our results indicate that neither rate of employment nor work group size is of importance for the probability of long-term sick leave.

The working conditions of importance for the probability of long-term sick leave in the full samples are cohesion, work load and job autonomy. Out of these, cohesion is the only variable that is found to have an effect in both years. The correlation between cohesion and long-term sick leave is negative, implying that the probability of long-term sick leave decreases with the degree of cohesion in the work group. An increased workload increases the probability of long-term sick leave and job autonomy decreases the probability. When the samples are separated over gender, we find that none of the working conditions included in our study are important to the male probability of long-term sick leave. For women the effect of cohesion is positive in both years and the effect of work load is positive in 2005.

4.2 Sensitivity analysis

As discussed in section 3.1 our samples suffer from imperfect matches between respondents in the surveys and observations in the employment records. In order to check the robustness of our results (with respect to these miss-matches) we run regressions based on two additional sets of samples. In the first set we exclude individuals that were reported absent at the time of the survey. In the second, we remove work groups with response rates below 0.5.

Even though there are some inconsistencies, the results regarding job-autonomy and cohesion are consistent with our previous findings. The results are presented in Appendix 3.

5 Discussion and conclusions

The aim of this paper is to examine the relationship between working conditions and sickness absence. However, before discussing working conditions we would like to comment on some interesting results regarding the controls included in our regressions.

Most empirical studies find that there is a positive relationship between sickness absence and age. Old people are generally sicker than young people, hence, sickness absence increases with age. In line with this we find that the probability of long-term sick leave increases with age. However, in the regressions regarding short-term sick leave we find the correlation to be negative, implying that older individuals are expected to have fewer spells of short-term sick leave. This relation is also found in the study by Böckerman and Ilmakunnas (2008). There are at least two possible explanations for the negative correlation between short-term sick leave and age. One explanation is that older people are indeed more absent but their absence spells are long rather than short. The other possible explanation regards differences in attendance norms. As previously mentioned it may be the case that some of the short-term spells correspond to voluntary sickness absence rather than involuntary. If this is the case, our results indicate that younger workers have higher voluntary absence, i.e. are more prone to shirk than are older workers. In the efficiency wage model it is hypothesized that workers with low salaries and/or temporary contracts are more prone to "cheat on the firm" as compared to workers with high salaries and/or permanent contracts (Shapiro and Stiglitz 1984). Given that short-term sick leave is a proxy for shirking, the negative relationship between monthly salary and short-term sick leave as well as between permanent contract and short-term sick leave are both in line with the predictions from the efficiency-wage model.

In our study we evaluate the relationship between working conditions and sickness absence in two different time periods. This gives us an opportunity to explore whether the observed correlations are consistent over time. There are however, at least two reasons why a comparison over time is difficult. To begin with, the compositions of workers within work groups change over time. People retire, change to other employers, start

working in other work places within the municipality or are subject to re-organizations. Approximately one quarter of the individuals in our two samples did not work in the same work group during both evaluation periods. Secondly, both employee surveys were conducted in a period when the overall sickness absence, both nationally and locally, decreased quite rapidly. Long-term sick leave spells became both fewer and shorter while short-term spells became more frequent. These changes over time in the relationship between long-term and short-term absence could have an effect on the associations between working conditions and our measures of sickness absence. Given these circumstances, our primary focus will be results that are consistent across both evaluation periods. In our regressions we find two relationships that are consistent over time: a negative relation between short-term sick-leave and job autonomy and a negative relationship between long-term sick leave and cohesion.

The negative relation between short-term sick leave and job autonomy implies that, in groups where workers can prioritize between tasks, individual short-term sick leave is expected to be relatively low. This result is consistent with our hypothesis regarding short-term sick leave and job autonomy. One possible explanation is that the jobs in groups with high job autonomy are more varied and stimulating, hence, motivating the employees to attend work (not to shirk). Another explanation could be that the possibility of prioritizing between tasks yields an opportunity to go to work even when feeling sick. In other words, the negative relation could indicate sickness presenteeism. When separating the samples over gender, we see that male short-term sick leave is more sensitive to the variable job autonomy. One way to interpret this result is that not being able to prioritize between ones tasks is of greater inconvenience to men than to women, hence, affecting male motivation and male shirking more than female. On the other hand, the results could indicate that having the opportunity to prioritize between tasks increases men's presenteeism more than women's. Our results are in line with the idea that men and women have different coping strategies, different threshold for when to be short-term absent and/or different motivation to attend work.

The negative relation between long-term sick leave and cohesion implies that long-term sick leave is expected to be lower among workers in work groups with high cohesion. These results are in line with theories regarding the importance of social support and they indicate that a strong sense of obligation towards co-workers is associated with lower levels of long-term sickness. When we separate our samples over gender we see that this relationship only holds for women. Our results are consistent with earlier studies that suggest that the importance of social support is different for men and women (Taylor et al. 2000; Bellman et al. 2003; Väänänen et al. 2003). Our results could imply that women are more sensitive to human relations than are men, hence confirming a gender prejudice (Konrad et al. 1992). However, there may be another explanation behind the negative correlation between long-term sick leave and cohesion. It has been found that humans tend to bond with people that are similar to themselves, in terms of gender, age, ethnical background etc. (Sanders and Nauta 2004). In our sample (and in the municipality as a whole) most men work in work groups with a majority of women. By belonging to the minority group men may feel a distance to the rest of the work group (Mastekaasa 2005). A feeling of social isolation due to gender is another possible explanation as to why men's long-term sick leave is not affected by the level of social cohesiveness in the group.

In conclusion, the results found in this study have interesting policy implications. Absence is a costly phenomenon, but bringing about changes in working conditions in order to increase attendance comes at a cost as well. Knowing which working conditions to address in order reduce absence is thus vital. The overall results imply that both the type of absence the employer wants to address and the gender composition of the work group have to be taken into account when attendance improving interventions are planned and carried out. In particular, our results suggest that in order to reduce the number of spells of short term sick leave (shirking), employers should increase the worker's job autonomy. This is particularly important for male workers. In addition, increasing work group cohesion is important in order to reduce the number of women being on long-term sick leave.

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Appendix 1
Below we present an English translation of the survey questions/statements underlying the variables of psychosocial working conditions. Original Swedish questions are given in parentheses.

Cohesion: "We cooperate well within my work group/unit"
(Vi har ett bra samarbete inom min arbetsgrupp/mitt arbetslag)

Trust: "I trust my closest supervisor"
(Jag känner förtroende för min närmaste chef)

Physical environment: "I am satisfied with the physical environment"
(Jag är nöjd med min fysiska arbetsmiljö)

Job autonomy: "I can prioritize among my duties/tasks."
(Jag har möjlighet att själv prioritera mellan mina arbetsuppgifter)

Work load:
"I seldom have too much to do"
"There are times when I have too much to do but in between it is quieter"
"I always have too much to do. It is never quiet"
(Jag har sällan för mycket att göra)
(Periodvis har jag för mycket att göra, men däremellan är det lugnare)
(Jag har alltid för mycket att göra. Det är aldrig några lugnare perioder)

Appendix 2

Table 4 shows descriptive statistics for variables from the employment records. The columns labeled *All* present descriptive statistics for the eligible populations. The columns labeled *Sample* present descriptive statistics for our full samples (both men and women included).

Table 4: Descriptive statistics

Variables	**2005 Mean (Std)**		**2007 Mean (Std)**	
	All	**Sample**	**All**	**Sample**
Short-term sick leave	1.39	1.41	1.49	1.57
	(1.96)	(1.96)	(2.01)	(2.07)
Long-term sick leave	0.24	0.24	0.21	0.21
Female workers	0.77	0.78	0.77	0.78
Age	46.60	46.11	45.77	45.21
	(10.72)	(10.79)	(10.76)	(10.79)
Monthly salary	20258	20157	20720	20652
	(4164)	(3722)	(4355)	(3899)
Number of observations	9367	6 386	9196	6858

Appendix 3

The tables present regression results from the sensitivity analysis.

Table 5: Regression results short-term sick leave, excluding workers who were absent at the time of survey

	2005			2007		
	All	Men	Women	All	Men	Women
Cohesion	-0.15	-0.13	-0.13	-0.03	0.12	-0.07
	(0.09)	(0.21)	(0.10)	(0.09)	(0.21)	(0.09)
Trust	-0.03	-0.05	0.02	0.06	-0.11	0.06
	(0.09)	(0.21)	(0.09)	(0.09)	(0.20)	(0.09)
Work load	0.08	-0.10	0.14	-0.02	**-0.70*****	0.13
	(0.12)	(0.27)	(0.12)	(0.12)	(0.28)	(0.12)
Physical environment	-0.02	-0.09	-0.07	**-0.19****	0.07	**-0.21****
	(0.09)	(0.21)	(0.10)	(0.09)	(0.22)	(0.09)
Job autonomy	**-0.26****	**-0.53****	-0.17	**-0.24****	**-0.61****	**-0.17***
	(0.11)	(0.25)	(0.11)	(0.10)	(0.25)	(0.10)
Number of observations	6059	1345	4712	6549	1457	5092

Note: Standard errors are shown in parentheses. (***), (**) and (*) indicate statistical significance at the 1%, 5% and 10 %levels, respectively

Table 6: Regression results on long-term sick leave, excluding workers who were absent at the time of survey

	2005			2007		
	All	Men	Women	All	Men	Women
Cohesion	**-0.34****	0.10	**-0.44*****	**-0.42*****	-0.26	**-0.45****
	(0.15)	(0.40)	(0.17)	(0.16)	(0.41)	(0.18)
Trust	-0.05	0.61	-0.05	-0.22	-0.21	-0.24
	(0.15)	(0.40)	(0.16)	(0.16)	(0.40)	(0.17)
Work load	**0.49****	0.41	**0.52****	-0.08	-0.18	0.10
	(0.19)	(0.49)	(0.21)	(0.21)	(0.53)	(0.23)
Physical environment	-0.23	-0.04	-0.26	**-0.32****	-0.60	-0.28
	(0.16)	(0.38)	(0.17)	(0.17)	(0.45)	(0.18)
Job autonomy	**-0.30***	-0.57	-0.28	0.02	-0.09	0.01
	(0.18)	(0.44)	(0.20)	(0.19)	(0.51)	(0.20)
Number of observations	6059	1345	4712	6549	1457	5092

Note: Standard errors are shown in parentheses. (***), (**) and (*) indicate statistical significance at the 1%, 5% and 10 %levels, respectively

Table 7: Regression results short-term sick leave, excluding work groups with response rates below 0.5

	2005			2007		
	All	Men	Women	All	Men	Women
Cohesion	-0.12	-0.09	-0.11	-0.08	0.12	-0.10
	(0.10)	(0.22)	(0.10)	(0.10)	(0.23)	(0.10)
Trust	0.02	0.01	0.06	0.06	-0.17	0.08
	(0.09)	(0.22)	(0.10)	(0.09)	(0.22)	(0.10)
Work load	0.05	-0.18	0.13	**-0.21****	-0.94	0.05
	(0.12)	(0.29)	(0.13)	(0.10)	(0.30)	(0.13)
Physical environment	0.01	-0.05	-0.04	-0.12	0.05	**-0.25****
	(0.10)	(0.22)	(0.11)	(0.13)	(0.25)	(0.11)
Job autonomy	**-0.31*****	**-0.67*****	**-0.21***	**-0.19***	**-0.59****	-0.10
	(0.11)	(0.25)	(0.12)	(0.11)	(0.28)	(0.11)
Number of observations	5911	1270	4641	6330	1309	4930

Table 8: Regression results long-term sick leave, excluding work groups with response rates below 0.5

	2005			2007		
	All	Men	Women	All	Men	Women
Cohesion	**-0.34****	0.00	**-0.41****	**-0.38****	-0.32	**-0.44****
	(0.16)	(0.39)	(0.17)	(0.17)	(0.41)	(0.18)
Trust	0.00	0.33	-0.06	**-0.27***	-0.33	-0.24
	(0.15)	(0.40)	(0.16)	(0.16)	(0.38)	(0.17)
Work load	**0.46****	0.17	**0.54****	-0.10	-0.46	-0.06
	(0.20)	(0.50	(0.21)	(0.23)	(0.47)	(0.24)
Physical environment	-0.28	-0.23	-0.28	-0.30	-0.11	-0.31
	(0.16)	(0.39)	(0.18)	(0.18)	(0.50)	(0.19)
Job autonomy	**-0.28***	-0.33	**-0.35***	-0.03	-0.11	0.01
	(0.16)	(0.39)	(0.21)	(0.19)	(0.50	(0.20)
Number of observations	5911	1270	4641	6330	1400	4930