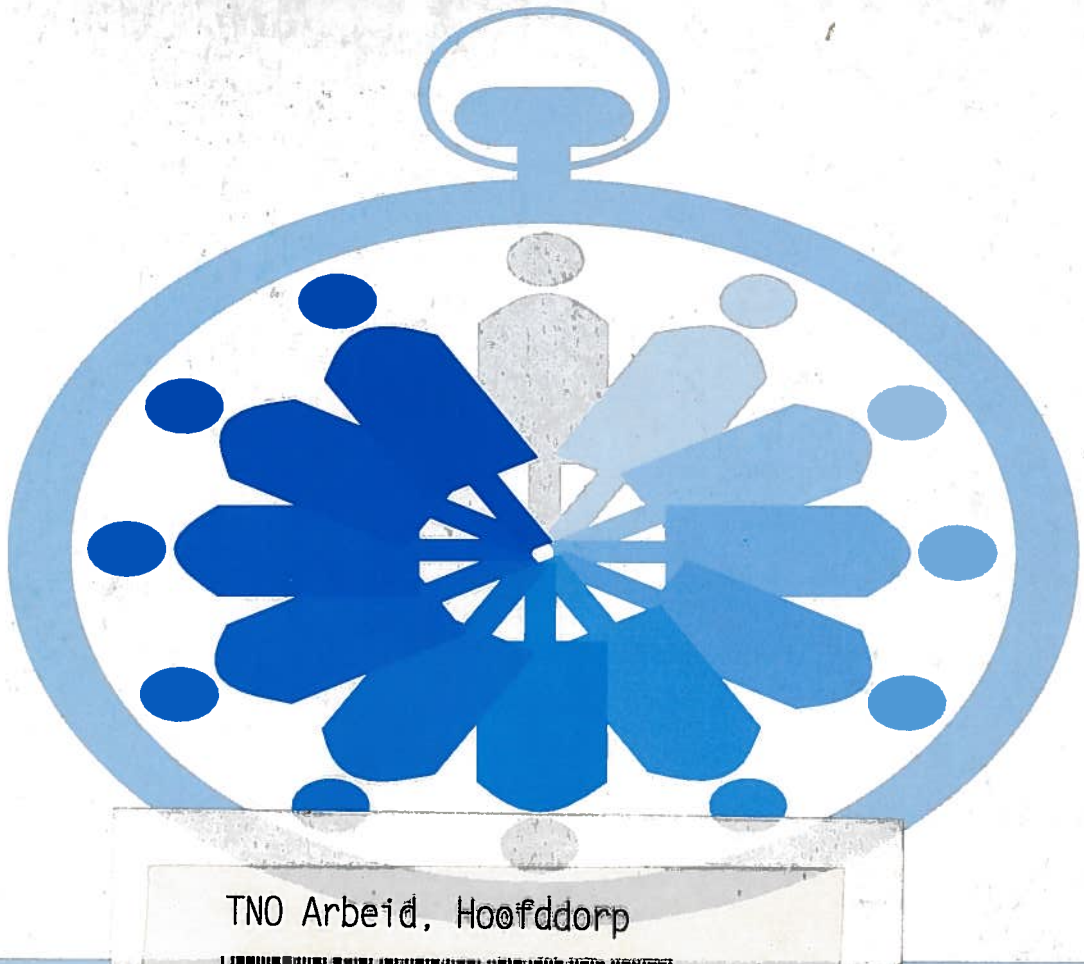
Time constraints and autonomy at work in the European Union



EUROPEAN FOUNDATION
for the Improvement of Living and Working Conditions

Time constraints and autonomy at work in the European Union

The European Foundation for the Improvement of Living and Working Conditions is an autonomous body of the European Union, created to assist the formulation of future policy on social and work-related matters.

This report has been written for the Foundation by S. Dhondt, NIA TNO B.V.

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by

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FOREWORD

A clear picture of working conditions in Europe and of their trends is essential to the definition of prevention policies. The Foundation contributes to this task by carrying out a survey of working conditions in all Member States every 5 years.

The last Survey, carried out in 1996, has shown some worrying trends. One of those being the increase in the intensity of work. Many factors can help to explain such phenomena: increased competition, working time reduction, etc. At the same time, although the situation has improved, workers' control over their work remains low. These two trends may explain why one-third of workers report stress.

The Foundation felt a more in-depth analysis of these important issues was needed, using both Foundation and national data sources. The present report intends to provide policy makers with information on stress factors in the workplace and therefore ways of preventing stress.

Clive Purkiss
Director

Eric Verborgh
Deputy Director

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CHAPTER 1

THEORETICAL BACKGROUND AND GOAL OF THE REPORT

1.1 Theoretical background

Time constraints and job autonomy are seen as two major dimensions of work content. These two dimensions play a major role in controlling psychosocial stress at work. The model in which these two dimensions are joined is commonly known as the 'job demands (=time constraints)-job control (=autonomy)'-model from the American researcher Karasek (1979; 1989; Karasek & Theorell, 1990). The model was developed in the seventies as a response to the then dominating stress theories. One of those theories only looked at the job demands in work (e.g. role stress, work overload) and had difficulties giving good explanations of how stress arose in the workplace. Work was considered to be stressful if job demands (for example time pressure demands) rose. The difficulty of this demands-theory is that all work submits workers to some kind of job pressure. All jobs would be stressing in such a theory. A second tradition was more oriented at job satisfaction and looked at job control as the explaining factor. According to Karasek, both theories had difficulty in explaining the paradox "that workers in higher status occupations were more satisfied than others with their jobs, were more mentally healthy, but at the same time experienced greater emotional tension concerning the events occurring in their jobs. Conversely, workers totally free of labour standards problems were not always the most satisfied, since many of their jobs lacked the quality of self-developing challenge that appeared to be a major determinant of high job satisfaction."

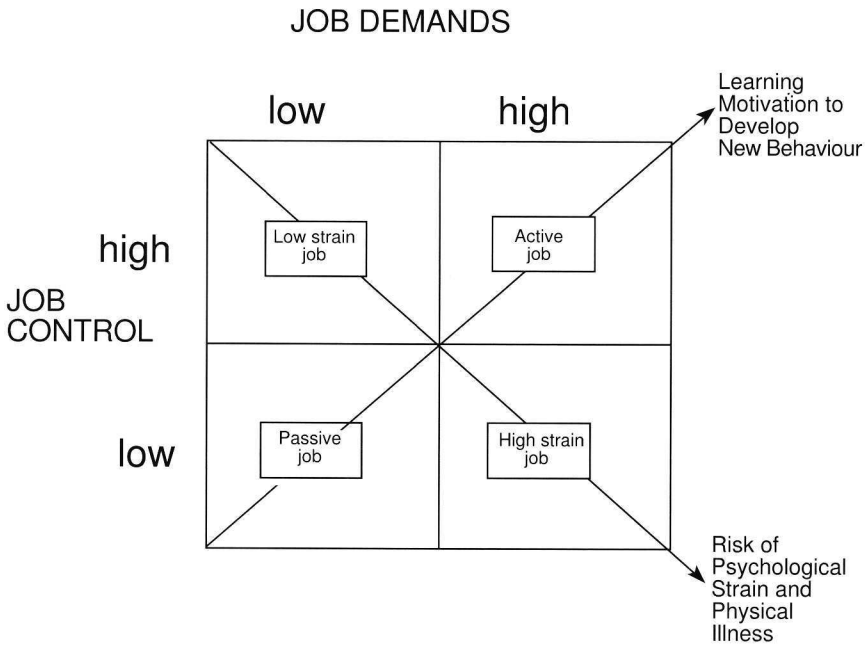
To solve this paradox, Karasek introduced a joint effects model in which 'demands' and the 'range of decision making freedom available to the worker' were integrated. This model reflects to a high degree the environment in which workers have to work and gives a good indication how to

improve working places to reduce strain and to achieve higher competency levels for workers. Figure 1.1 summarizes the types of jobs that might result from the different combinations of job demands and job control.

Four different work situations can be distinguished in the model:

- active jobs: in this work situation, workers experience high levels of demands but enjoy at the same time enough possibilities to control these demands;
- passive jobs: in this work situation, workers experience no job demands and have no control of possibly changing features of the work situation;
- high strain jobs: in these situations, workers experience high demands but have no way of controlling what happens. They passively have to adapt to ever changing and possibly conflicting demands;
- low strain jobs: in these situations, workers experience low demands and have an excess capacity of control to deal with problems.

Figure 1.1 The 'job demands-job control' model (source: Karasek & Theorell, 1990)



The model contains two predictions. First, psychological strain increases as job demands increase, relative to decreasing job control. Second, competency levels increase when demands from a situation are matched with the required levels of control. This means that passive jobs might be attractive from a strain point of view, but in such work situations, workers have no possibility to develop their skills.

In this model, workers with high strain jobs are at risk of coronary heart disease, hypertension and atherosclerosis. These conclusions have been formulated on the basis of large scale population

research in the USA and the Nordic countries (Sweden, Finland, Norway, Denmark). These studies point to the necessity to closely monitor these facts and to develop policies to counter such sickening work places.

1.2 Political implications of the model

The Karasek-model has been one of the cornerstones for stress legislations in different countries (e.g. The Netherlands, Nordic countries and Belgium* (preparatory legislation)). Since the beginning of the 1990s, several measurement instruments (e.g. WEBA in the Netherlands (Vaas et al., 1995) have been developed to measure stressful situations in working situations. Different national and international surveys have added questions which allow to follow and monitor psycho-social stress on the company floor.

In the last two decennia, most West-European countries have conducted large scale surveys on working conditions in which time constraints and autonomy have been measured. The Foundation has been working since 1991 on a European questionnaire on the work environment (EFILWC, 1992; 1996) and has played a stimulating role in standardising the different national work environment surveys. Previous reports have shown that results of most national surveys cannot be compared because each country uses different questions for the same topics, different answering methodologies etc. (Dhondt, 1994; 1995). The different surveys do however supply the information which can be used to monitor the effects from the Karasek-model.

1.3 Goal of the study

The European Foundation for the Improvement of Living and Working Conditions (EFILWC) has asked NIA TNO to prepare a report on time constraints and autonomy in Europe using the different surveys in Europe.

The aim of the report is threefold:

- to consolidate input from the various European and national questionnaires on the issue of time constraints and autonomy at work;
- to provide a description of the situation based on the 1991 and 1996 European Surveys on Working Conditions carried out by the Foundation;
- to give an overview of the situation in Europe on time constraints and autonomy at work.

To give these descriptions of the situations on time constraints and job autonomy in the different countries, an analysis is required to show the comparability of the different surveys. We will present the data on the different countries and show at the same time to which degree these data can be compared. This analysis will be a validity test for the 'job demands-job control'-model.

* See for example DDW1993

The research questions for this study are therefore:

- to which degree can the different questions on time constraints and job autonomy be compared?
- what is the validity of the 'job demands-job control' model based on the dimensions of time constraints and job autonomy in the different surveys?
- how do time constraints and job autonomy develop themselves (trends) in the European Union and the different member states?

The network of "questionnaire based surveys" set up by the Foundation has provided the background information for this study. The report is limited to the analysis of the questionnaires from the following countries and partners in the network: Austria, Sweden, Finland, Denmark, The Netherlands, Spain, France, Germany and the Foundation.

CHAPTER 2 METHODOLOGY

2.1 Methodology

To answer the three research questions, three types of analysis are required.

Content analysis

To consolidate inputs from the various questionnaire-based surveys on the issue of time constraints and autonomy at work, we use the questions from the different surveys on time constraints and autonomy at work. For the selection of the different questions from these surveys, we will build on the results from a content analysis of these questionnaires (Dhondt, 1994; 1995; see also Wikman, 1994).

Graphic analysis of the 'job demands-job control' model

To describe the situation on time constraints and autonomy in Europe, we will use the results from the Foundation surveys (1991; 1996) and compare the results with the different national surveys on which data is available. In this comparison, we will look at the distribution of the work force for each country for both variables (time constraints and job autonomy) combined into the job demands-job control model. This analysis is needed to see if the questions can sufficiently differentiate between job categories and to see which similarities and differences in results appear between the countries. Karasek (1990) uses the distribution of jobs according to the different levels of job demands and job control to make his theoretical model more concrete. According to him, such an association between jobs and the model helps confirm the objective validity of the different job dimensions and gives the possibility to identify more specific populations with

desirable and undesirable job situations. We will copy his method by making such job profiles for the different countries.

Karasek also deducts the validity of his model from the predictive power of his model. Next to this first analysis, we will look at the predictive power of the time constraints-autonomy-models in the various questionnaires for dependent variables such as psychological stress, job satisfaction and/or commitment to work. In his model, straining jobs should show higher degrees of stress symptoms than other less riskful working situations. More active jobs should show higher degrees of job satisfaction and job commitment. Such a test can only be preliminary because most of the surveys were not constructed for such a test. A cross-sectional analysis is only a limited method to test the validity of a model. Questions on dependent variables have been selected and tested in respect to their capability to give an accurate and reliable picture of the job reality. Only some questionnaires possess questions on psychosocial health, on job satisfaction or job commitment.

One remark is necessary at this moment. It is already clear from previous research (Dhondt, 1994) that differences between countries will appear because the survey methodologies (sample population, treatment of non response, sampling technique, sampling period, data gathering technique, answering possibilities) differ. We will try to take these differences into account.

Description of the situation on time constraints and job autonomy

For the development and description of the situations in the different countries, the previous two analyses will have provided most of the information. Next to these analyses, we will look at the development of time constraints and job autonomy in the different surveys.

Table 2.1 Questionnaire-based surveys in the EU countries on working conditions

Country/organisation	Questionnaire	Year
• European Foundation for the Improvement of Living and Working Conditions	• European Survey on the Work Environment	1991, 1996
• Austria	• Mikrozensus	1994
• France	• Enquête sur l'Emploi - Questionnaire Complémentaire sur les Conditions du Travail	1991 (1993)
• Spain	• Encuesta nacional de condiciones de trabajo	1992
• Germany	• BIBB/IAB-Erhebung	1991/2
• The Netherlands	• Monitor Stress en Lichamelijke belasting	1995
	• Doorlopend Leefsituatie Onderzoek (DLO)	1995
• Denmark	• Kortlægning af danske lønmodtageres arbejdsmiljø og helbredsforhold	1995
• Sweden	• Arbetsmiljön	1995
• Finland	• Arbetslivets kvalitet	1990

2.2 Data

The questions and data from nine national and European surveys are analyzed in this report. In the following table, the consulted surveys and the respective survey dates are given. We will limit our primary analysis to the last survey done in each country.

This study will orient itself at some slightly 'dated' data. Most countries are preparing new surveys at the moment that this study is being carried out: Finland (1997/8), Spain (1998), Belgium (1997), the Netherlands (1996 and 1997). For the Netherlands, we will orient us in first instance at the Monitor-study, and secondly at the DLO (Houtman et al., 1991).

2.3 Variables in the different surveys

Time Constraints

Table 2.2 gives an overview of different definitions of time constraints in the different national surveys. For the Foundation survey, we have looked at the 1996 survey because it contains more questions than the 1991 survey did.

Table 2.2 Different definitions of time in questionnaire-based surveys in the EU countries on working conditions

Time Constraints as:	EFILWC 96	Austria	Denmark	Germany	Finland	France	Netherlands	Spain	Sweden
time limit	✔	✔	✔	✔	✔	✔		✔	✔
interruptions				✔		✔			
sources of activity	✔					✔		✔	
repetition of tasks	✔		✔	✔	✔	✔	✔		✔
speed of tasks	✔			✔	✔		✔	✔	
control possibilities	✔		✔		✔	✔		✔	✔
evaluation				✔	✔	✔		✔	

From our previous research, we know that the different questionnaires use at least seven different ways to measure time constraints. We will limit ourselves here to time constraints as 'time limits' or as 'speed of tasks'. Both type of questions were seen to be the best questions for this job dimension. These questions define time constraints as certain frontiers in time or deadlines. Even with this limitation, the questions from the different surveys still have diverging meanings. In some countries, a scale was constructed for time constraints. If such a scale has been validated, then this information will be used. In supplement 1, the questions which are used in the different surveys are given. For a full content analysis of time constraints, see Dhondt (1994).

Autonomy

Table 2.3 gives an overview of the different uses of job autonomy in the different national surveys. As can be seen from table 2.3, the different questionnaires use at least four different autonomy

Table 2.3 Different definitions of autonomy at work in questionnaire-based surveys in the EU countries on working conditions

Autonomy as:	EFILWC 96	Austria	Denmark	Germany	Finland	France	Netherlands	Spain	Sweden
work rhythm	✔		✔	✔	✔		✔	✔	✔
sequence	✔		✔		✔	✔	✔	✔	✔
workplace							✔	✔	
method	✔		✔	✔	✔	✔	✔	✔	

questions. The Mikrozensus from Austria does not contain any autonomy questions. This means that most of the analyses cannot be done for Austria. For the other countries, we will limit ourselves to method autonomy. This question is broader than the most other uses, and such questions are common to most surveys. As for time constraints, the questions which are used in the different surveys are given in supplement 1. For a full content analysis of job autonomy, see Dhondt 1995.

Health outcomes, satisfaction and commitment

Table 2.4 gives an overview of the different outcome variables in the different national surveys.

Table 2.4 Outcome variables in questionnaire-based surveys in the EU countries on working conditions

Outcome as:	EFILWC 96	Austria	Denmark	Germany	Finland	France	Netherlands	Spain	Sweden
health effects	✔	✔	✔		✔		✔	✔	✔
job satisfaction	✔		✔	✔			✔		
commitment					✔			✔	

As can be seen from table 2.4, the different questionnaires do not all use the same outcome variables. From this table, it appears that in the French questionnaires there are no indicators for the dependent variables. The main reason for this is that the French surveyors do not want to test the quality of their surveys with 'imperfect' indicators. Most questionnaire surveys suffer from 'common method variance'. Another reason is that one can never be sure that riskful job conditions will immediately have an effect on health or satisfaction indicators. Cross-sectional research is not the best method to test the relations between job conditions and dependent variables*. In Spain, only the survey of 1987 used some indicators for health problems and job satisfaction. These questions were not retained in the 1992 survey which is used in this report. The Danish, Finnish, Swedish and Dutch questionnaires use scales to measures health outcomes. As for time constraints, the questions which are used in the different surveys are given in supplement 1.

* Communication from Michel Gollac (director of the Centre d'Etudes de l'Emploi and responsible for the French surveys)

2.4 The structure of the report

Chapter 3 presents the occupational distributions according to autonomy and job demands. Chapter 4 shows some results about the validity of the job demands-job control model. The description of the current situation in Europe will be done in chapter 5. Trends in time constraints and autonomy are described in chapter 6. The different results will be discussed in the final chapter.

CHAPTER 3

OCCUPATIONAL DISTRIBUTION ACCORDING TO THE 'JOB DEMANDS- JOB CONTROL' MODEL IN THE DIFFERENT COUNTRIES

3.1 Introduction

In this chapter, we try to give the distribution of jobs in the different surveys according to the 'job demands-job control' model. In these profiles, the two dimensions of the model are seen as scale units: one unit equals a proportion of standard deviation variation on that job dimension at the individual level of each national population. The origin point for each plot corresponds to the individual-level population means on each dimension. The dot size reflects the number of people in that occupation in the national samples. We discuss each plot and look at the way these plots give different pictures than those given by Karasek. Section 3.11 summarizes the most important differences and similarities between the different surveys.

3.2 Finland

In the Quality of Work Life-survey of 1990, there were some 4850 respondents, of whom 3502 were wage-earners (Kauppinen-Toropainen, 1993). The survey distinguishes between nine occupational groups. In table 3.1 these groups are listed.

In figure 3.1, the distribution of jobs according to the two scales 'autonomy' and 'time constraints' is given. Jobs are scattered across a diagonal line in the graph. Managerial work and professional white collar workers are situated in the active job quadrant. Blue collar work (production, construction and farming) seem to be predominantly 'low job demands, low autonomy'. Five of the nine occupational groups are situated either on the mean of 'autonomy' or either on the mean

Table 3.1 Distribution of number of workers according to job title in the Finnish Quality of Work Life-survey 1994 (n=3503)

Job title	Number of workers	Percent
• Technical, scientific, juridical, humanistic and artistic work	510	14.5
• Health care and social work	439	12.6
• Managerial work	111	3.1
• Clerical work	503	14.4
• Commercial work	370	10.6
• Service work	407	11.6
• Agriculture, forestry, and fishing	81	2.3
• Production, mining and construction	886	25.3
• Transport and communication	196	5.6
Total	3503	100

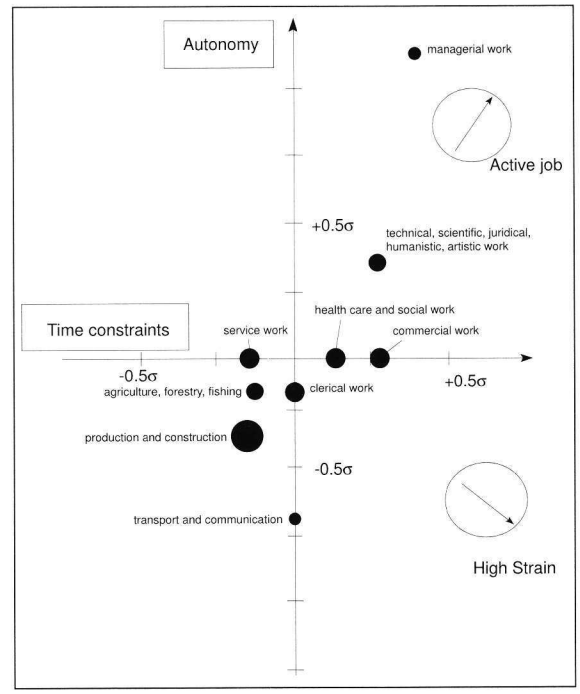


Figure 3.1 The occupational distribution of 'autonomy' and 'time constraints' in the Finnish Quality of Work Life-survey 1990 (n=3503)

of 'time constraints'. There are no occupational groups in the two remaining quadrants of the graph, although the confidence intervals of the different groups situated on the axes overlap the two empty quadrants. The trend is that blue collar workers enjoy very little autonomy and low job demands.

3.3 The Netherlands

Some 7717 workers participated in the Dutch Monitoring Stress & Physical Job demands-study and some 6543 workers participated in the second survey in 1995 (Houtman et al., 1994; Houtman et al., 1997). The division of these workers according to job title can be seen in table 3.2.

Table 3.2 Distribution of number of workers according to job title in the Monitor Stress and Physical Demands 1993 (n=7717) and 1995 (n=6543)

Job title 1993	Number of workers	Percent	Job title 1995	Number of workers	Percent
• natural scientist	186	2.4	• scientific researchers	74	1.1
• engineer	124	1.6			
• physician	10	0.1	• physician/nurse	470	7.2
• accountant	50	0.6	• accountant/cashier	160	2.4
• law professional	48	0.6	• policy maker/manager personnel	238	3.6
• teacher	15	0.1			
• general	195	2.5	• other service personnel	365	5.6
• manager - administrative	194	2.5			
• secretary	244	3.2	• secretary/typist	250	3.8
• accounting clerk	181	2.4			
• office computer operator	135	1.7			
• manager - transport, communication	35	0.4			
• post office worker	29	0.3			
• telephone operator	101	1.3			
• administrative clerk	944	12.5	• other administrative jobs	609	9.3
• director	87	1.1			
• manager - trade	162	2.1	• shop attendant/sales	40	0.6
• sales clerk	610	8.1	• sales personnel products	79	1.2
• billing clerk	69	0.9	• other commercial jobs	148	2.3
• cook	47	0.6	• cook/waiter	47	0.7
• janitor	337	4.4	• janitor	43	0.7
• fireman, police	328	4.3			
• manager - production	497	6.6	• supervisor production	150	2.3
• chemical operative	76	1.0			
• textile operative	97	1.2			
• food & beverage operative	78	1.0			
• garment stitcher	72	1.0	• garment stitcher/upholstering	17	0.3
• forging operative	129	1.7	• mechanical operative	194	3
• cutting operative	204	2.7			
• plumbing operative	224	2.9	• plumber/cutting operative	263	4
• electrotechnical operative	229	3.0	• electric operative	240	3.7
• carpenter	11	0.1			
• printing operative	226	3.5			
• construction operative	103	1.3	• construction worker	433	6.6
• machinist	98	1.3	• machinist	189	2.9
• dispatcher	233	3.1	• dispatcher	73	1.1
• chauffeur	138	1.8	• chauffeur/sailor	188	2.9
• skilled operative	289	3.8	• other industrial jobs	544	8.3
• unskilled manual workers	639	8.5	• other jobs	1034	15.8
			• other transport operatives	24	0.4
			• household personnel	198	3
			• farmer/fisherman	36	0.6
total	7514			6106	
job title unknown	203			437	6.7
total	7717	100		6543	100

The goal of the 1995 survey has changed in comparison to the 1993 survey. Table 3.2 makes it clear how the research population has changed. This makes it impossible to deduct trend information for these studies. For trend information (see chapter 6), we will look at the DLO which is a more nationally representative survey (Hoogendoorn et al., 1996).

In figure 3.2, the distribution of jobs according to the two working conditions in 1993 is given. In figure 3.3, the distribution for 1995 (scales) is given. In 1993, managerial jobs and white collar jobs (teacher, scientist, sales clerk) are situated in the active job-sector. The only blue collar job in this quadrant is the job of carpenter. In the quadrant 'low job demands, high autonomy', mainly administrative jobs can be found. In the quadrant 'low job demands, low autonomy', mainly skilled and unskilled blue collar jobs are situated. In the quadrant 'high strain-jobs', there are seven job categories: billing clerk (people working at the counters of shops), physician, chemical and printing operatives, freight handlers and two extremely strained jobs, garment stitcher and food & beverage operators. Garment stitcher are an as stressful a job as was found in the Quality of Employment Surveys by Karasek. The figure resembles to a high degree the results from Karasek.

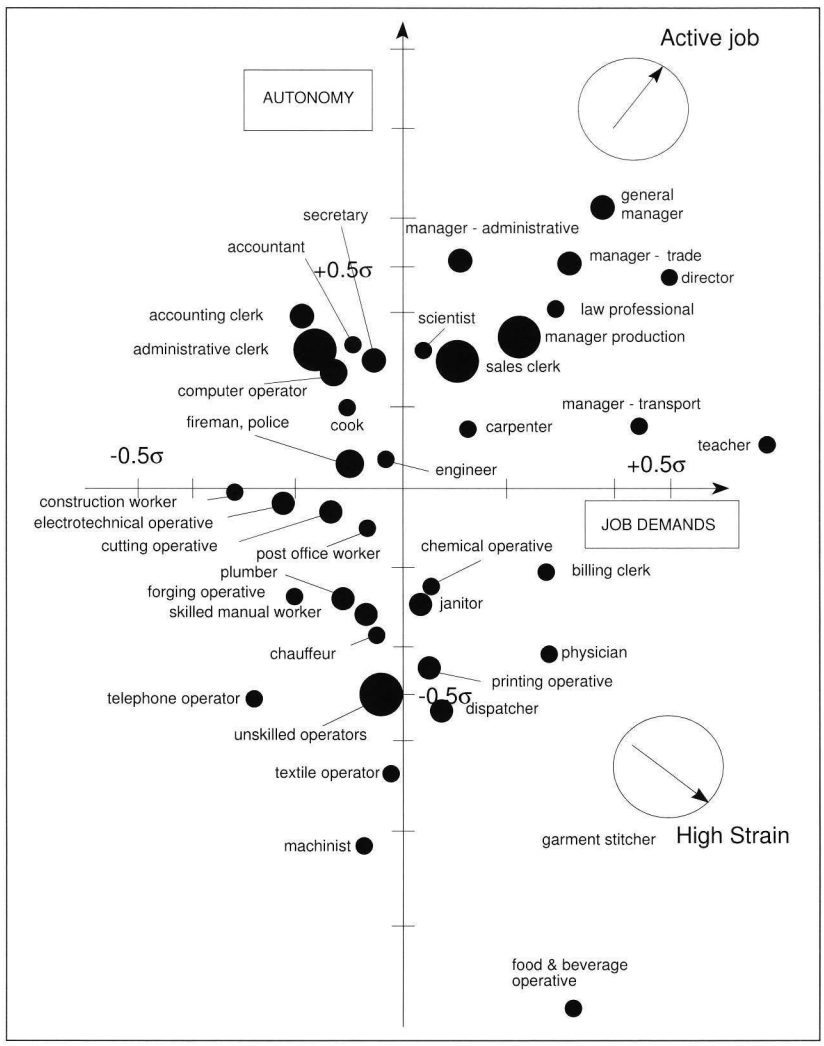


Figure 3.2 1993: The occupational distribution of 'autonomy' and 'job demands' in the Dutch Monitor Stress and Physical Demands (n=7717)

Figure 3.3 differs only slightly from the 1993 situation. About half of the jobs are in the same quadrant of the figures. The only remarkable difference is the job of janitor, which has shifted to the high control, little demands quadrant of the graph. The 1995 figure shows that apparently, taken into account the short time period between the two surveys, little has changed for the different jobs.

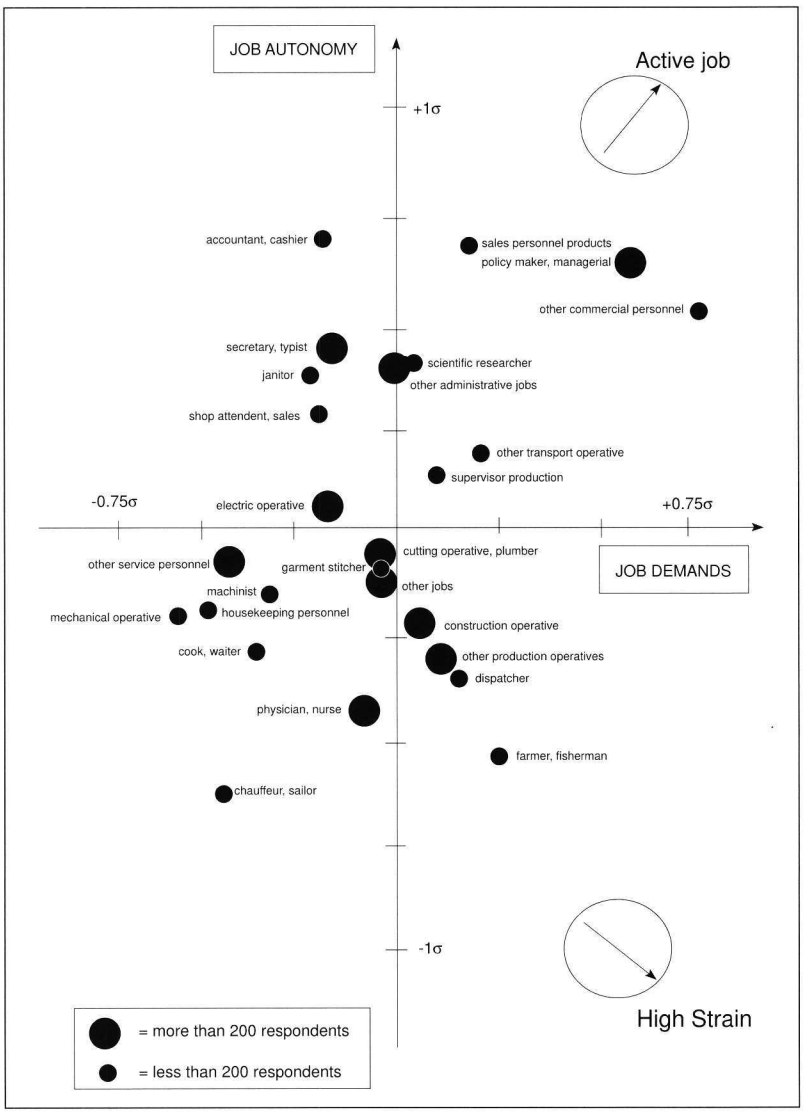


Figure 3.3 1995: The occupational distribution of 'job autonomy' and 'job demands' in the Dutch Monitor Stress and Physical Demands (n=6543)

3.4 Spain

In the Spanish survey of 1992, some 3200 persons participated. In this survey, only a list of 7 occupational groups is used. The category of 'skilled operators' is quite large in this population which reduces the variance in the sample considerably.

In figure 3.4, the distribution of jobs is given according to the questions "81. Do you have to work at a high speed?" and "98. To what degree do you have autonomy to organise your work?"

Table 3.3 Distribution of number of workers according to job title in the 'Encuesta Nacional de Condiciones de Trabajo - 1992' (n=3200 - Total entrev.)

Job title	Number of workers	Percent
• unskilled workers	777	24.3
• skilled operators	1019	31.8
• service jobs (subalterns)	131	4.1
• administrative jobs, secretary	407	12.7
• white collar workers (clerk)	401	12.3
• intermediate managers	327	10.2
• managers	124	3.9
Total	3200	100

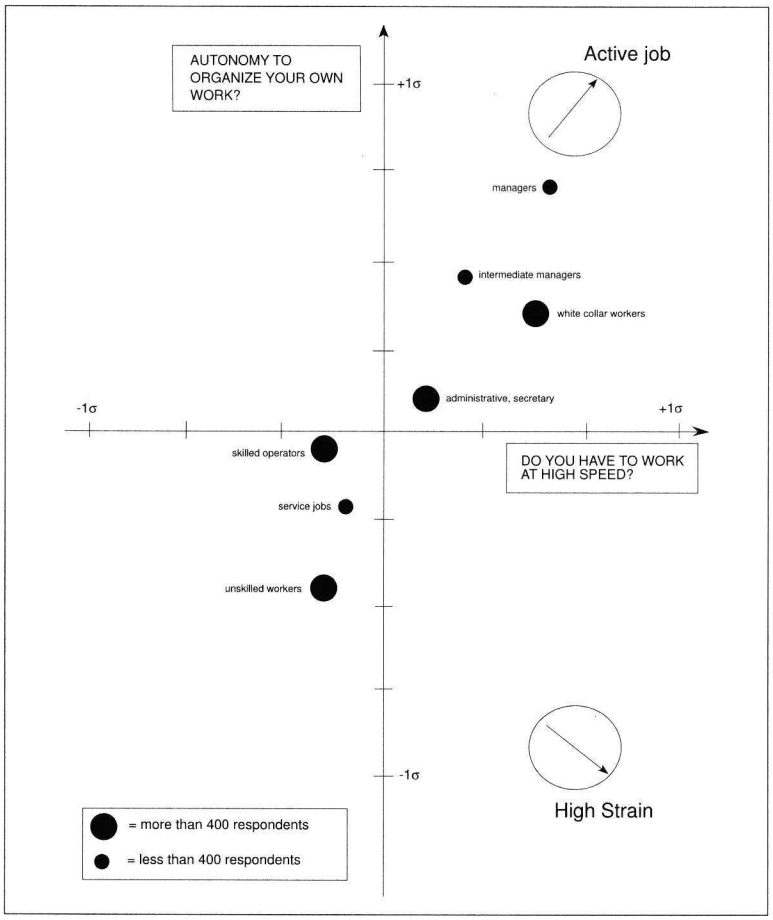


Figure 3.4 The occupational distribution of 'autonomy' and 'job demands' in the Spanish Encuesta Nacional de Condiciones de Trabajo 1992 (n=3200)

Figure 3.4 shows a rather limited distribution for the seven jobs. All blue collar jobs are situated in the low demands and low autonomy quadrant. All white collar jobs are situated in the active job- quadrant. This result is confirmed when looking at other questions (95). The limited degree of differentiation in the blue collar jobs reduces the information in this figure. From a job content view, managerial jobs seem to have the most attractive content.

3.5 France

In table 3.4 a list of 13 jobs is given which has been used in the French survey of 1991. This table shows more differentiation than the Spanish table, but even here the blue collar jobs are only marginally differentiated.

Table 3.4 Distibution of number of workers according to job title in the survey 'Conditions, organisation du travail et nouvelles technologies en 1991 (n=18637)

Job title	Number of workers	Percent	Job title	Number of workers	Percent
• public officials, natural scientist	878	4.7	• administrative secretary	1985	10.6
• managers	1226	6.5	• sales personnel	770	4.1
• teaching, health care jobs	1844	9.9	• service jobs	1007	5.4
• administrative professionals	1129	6.0	• skilled operators	3992	21.4
• technicians	798	4.2	• unskilled operators	2018	10.8
• supervisors	580	3.1	• agricultural labourers	230	1.2
• civil servants	2169	11.6			
Total				18626	100

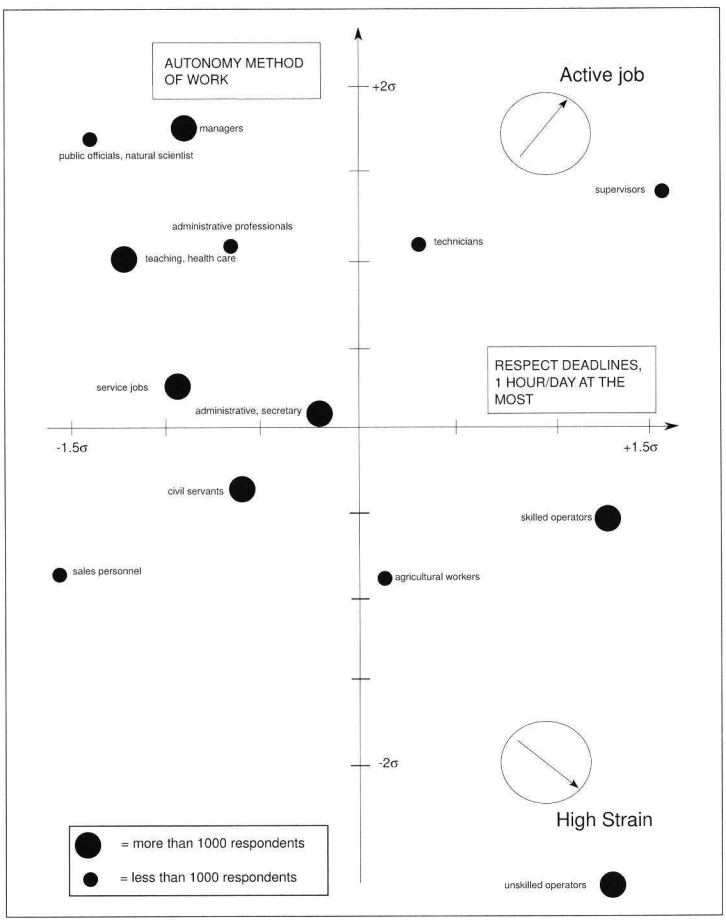


Figure 3.5 The occupational distribution of 'method autonomy (Q.31)' and 'norm-limits (Q.29)' in the French 'Conditions, Organisation du Travail et Nouvelles Technologies en 1991' (n=18637)

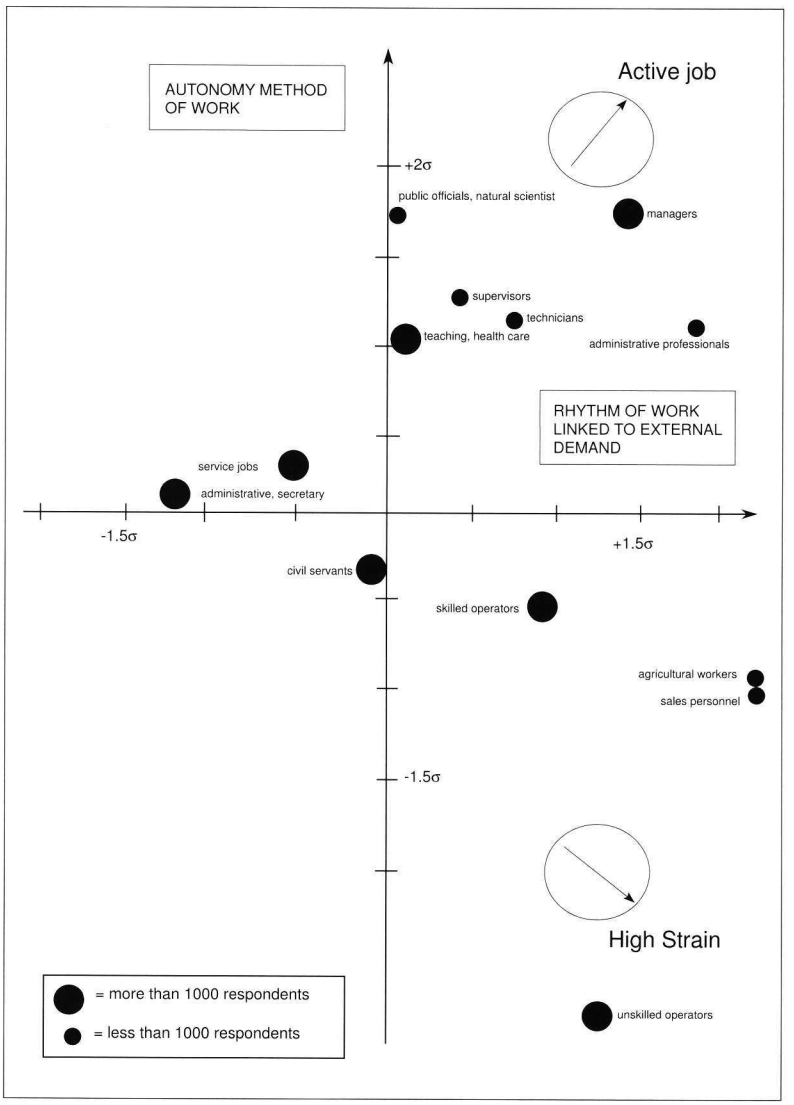


Figure 3.6 The occupational distribution of 'method autonomy (Q.31)' and 'external demands (Q.29)' in the French 'Conditions, Organisation du Travail et Nouvelles Technologies en 1991' (n=18637)

In figures 3.5 and 3.6, the occupational distributions for the questions 29 and 31 are given. In the first figure, 'autonomy of method' is tabulated with the answering category 'respect for deadlines (less than 1 hour or 1 day)'. 'Autonomy of method' is calculated from the question 'percentage of workers of which supervisors tell them how to do their work or not'. From this figure it is clear that most white collar jobs have a high degree of autonomy and that they do not have to respect strict deadlines. Blue collar workers (skilled, unskilled and agricultural) do have to respect such deadlines and have superiors which tell them how to do their work. Supervisors and technicians are the only active jobs in this figure, mainly because they have to respect deadlines but are not themselves supervised. Because these questions are mostly suited for blue collar workers, we have made figure 3.6 in which 'autonomy method' is tabulated with the question 'rhythm of work linked to an immediate response to an external demand'. In this figure, the demands show a mirrored view from figure 3.5. Most white collar and technical jobs are situated in the 'active job'-quadrant. Only sales jobs, as white collar jobs, are situated in the 'high strain-quadrant'. Because the standard deviations was not available for this survey, the standard deviation has been estimated from the available data (Dhondt, 1994).

Table 3.5 Distribution of number of workers according to job title in BIBB/IAB-Erhebung West and East Germany (n=31011)

Job title	West Germany – Number of workers	%	East Germany – Number of workers	%
• farmer	576	2.4	267	4.0
• miner	54	0.2	16	0.2
• chemical operative	272	1.1	73	1.1
• printing operative	197	0.8	35	0.5
• cutting operative	364	1.5	102	1.5
• forging operative	426	1.7	124	1.8
• mechanical operative	1793	7.3	425	6.3
• electric operative	797	3.3	220	3.3
• textile operative	316	1.3	84	1.2
• food and beverage operative	487	2.0	190	2.8
• construction operative	748	3.1	354	5.2
• upholstering, joiner	564	2.3	105	1.6
• painting operative	316	1.3	70	1.0
• dispatcher	297	1.2	40	0.6
• unskilled manual workers	422	1.7	94	1.4
• machinist	290	1.2	183	2.7
• natural scientist, engineer	1726	7.1	508	7.5
• sales personnel	2345	9.7	468	6.9
• services sales personnel	980	4.0	134	2.0
• administrative personnel, secretary	4728	19.5	1146	17.0
• chauffeur	980	4.0	397	5.8
• transport operative	410	1.7	129	1.9
• security operative	709	2.9	179	2.6
• publisher, artist	454	1.9	88	1.3
• physician	1091	4.5	247	3.7
• teacher	1455	6.0	590	8.7
• nurse, health care jobs	311	1.3	46	0.7
• hotel personnel	323	1.3	73	1.1
• household workers	142	0.6	63	0.9
• janitor	605	2.5	163	2.4
• other operative	97	0.4	132	2.0
Total	24267	100	6744	100

3.6 Germany

For Germany, we possess the 1991/92 BIBB/IAB-data for West and East Germany. Although both countries were united by that date, the survey distinguishes between both parts of Germany. In table 3.5 a list of 31 jobs is given which has been used in the survey. Some jobs (e.g. mechanical, sales) have been integrated under one title.

To make figures 3.7 and 3.8, we have used the questions 'strong deadline or performance pressure' and 'work dictated into detail'. In the figures, if a job is on the top side, this means that the work of a job is not dictated into great detail. The occupational distribution for West Germany is given in figure 3.7, the distribution for East Germany is given in figure 3.8. If we compare both figures with one another, we can see that approximately one third of the jobs show a different psychosocial profile in the two countries. In most cases, the differences are not extreme. Farmers and security personnel in West Germany have an active job-profile whereas they have a high strain-profile in East Germany. Probably the political differences between the East and the West can explain these differing profiles. There are less West German blue collar jobs with a high strain-profile compared to East Germany. Western blue collar jobs are mainly situated in the passive quadrant of the figure. One common feature of both figures is that white collar jobs have a high degree of autonomy (work not dictated into detail). Teachers, household workers and sales personnel have active jobs in both parts of Germany. Missing from these figures are managerial jobs.

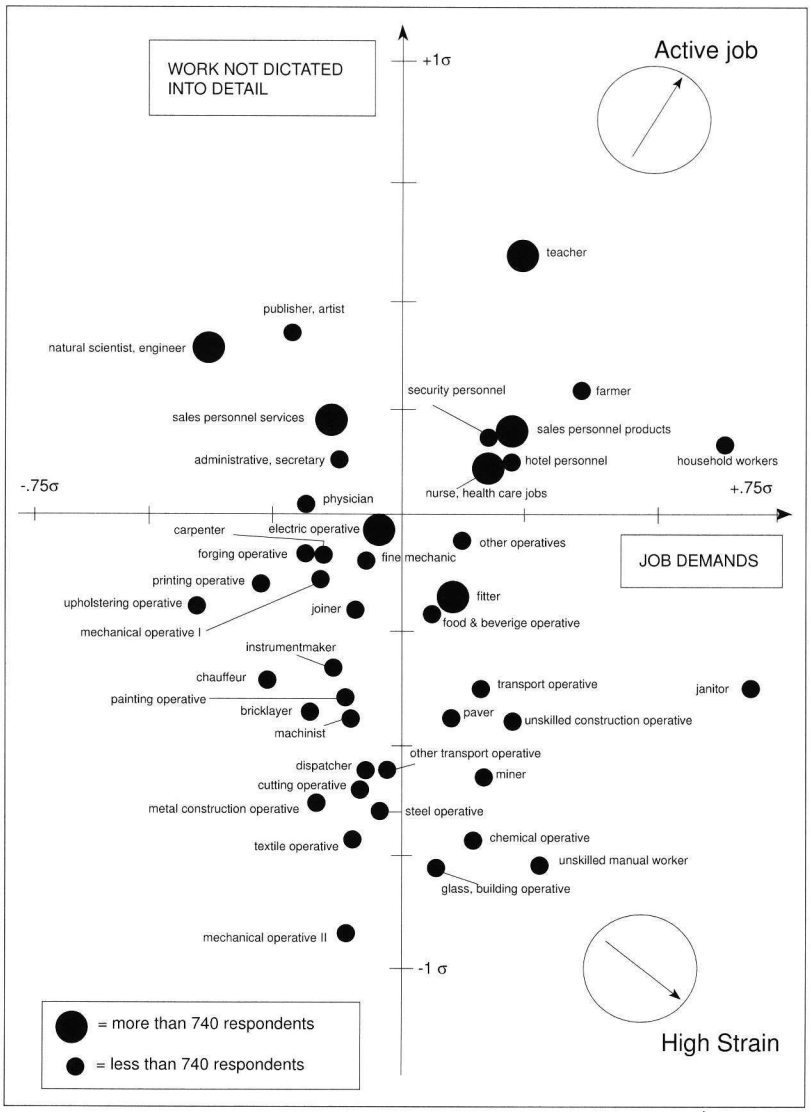


Figure 3.7 The occupational distribution of 'autonomy' and 'job demands' in the German BIBB/IAB-Erhebung - West Germany (n=24267)

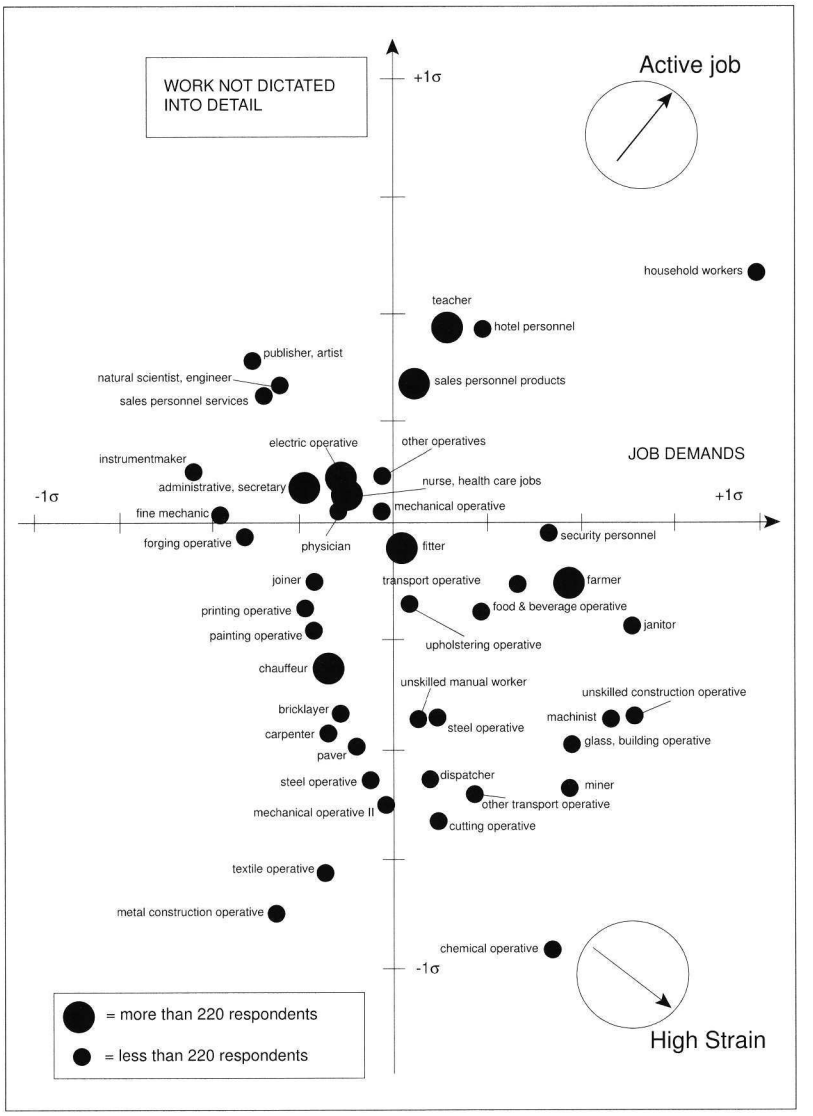


Figure 3.8 The occupational distribution 'autonomy' and 'job demands' in the German BIBB/IAB-Erhebung - West Germany (n=6744)

3.7 Austria

Austria has executed a survey in 1994 in which there was one question on time constraints. We will show the distribution for this one variable (Fasching, 1996). In the following table, the distribution of occupations is given.

Time pressure is an important work related demand in Austria. In fact, it is the highest self reported constraint in the Austrian working population (Fasching, 1996). Among the different occupational groups, it is clear that time pressure is highest among managerial and white collar jobs. This result is comparable to the other countries in this report. Because we do not know how job autonomy fares among the Austrian workforce, it is not possible to distinguish among high strain jobs and active jobs. Even though the percentages for blue collar and agricultural jobs score lower than managerial and white collar jobs, as we can see in other countries, the percentages are still quite high if compared to other work related constraints in Austria.

Table 3.6 Distribution of number of workers according to job title in the Austrian Mikrozensus and distribution of the level of time constraints (1995)

Job title	Number of workers	Percent	Work under time pressure Percentage
Self employed and helpers:	403.9	14.3	
• in agriculture	182.1		42.8
• in other sectors	221.8		51.4
Employed	2456.8	85.7	43.3
Blue collar workers	1039.0		41.2
White collar, civil servants:	1333.5		45.9
• lower non marginal jobs	836.5		42.0
• higher, managerial jobs	497.0	2	52.5
Working population (x 1.000)	2860.9	100	43.9

3.8 Denmark

In the Arbejdsmiljø 1995, there were some 5575 respondents. The different jobs have been clustered into 9 major occupational groups. In table 3.7, these groups are listed. Remarkable is the high presence of research and technical work in the survey population.

In figure 3.9, the distribution of occupational groups according to the questions 'work under time pressure' and 'control work tempo' is given. The different groups are spread over the four quadrants of the graph. Administration and managerial work and office workers are situated in the active job sector. Blue collar work (mining, construction) seem to be predominantly 'low job demands, low autonomy'. Most of the groups are situated near to the overall population means on

Table 3.7 Distribution of number of workers according to occupational group in the Danish Arbejdsmiljø 1995 (n=5575)

Job title	Number of workers	Percent
• Research, technical work	1590	29.0
• Administration, managerial work	282	5.1
• Office work	924	16.8
• Trade, commerce	413	7.4
• Service	568	10.3
• Agriculture, fishing	108	1.9
• Mining etc.	330	6.0
• Manufacturing work	569	10.3
• Construction etc.	704	12.8
Total	5485	100

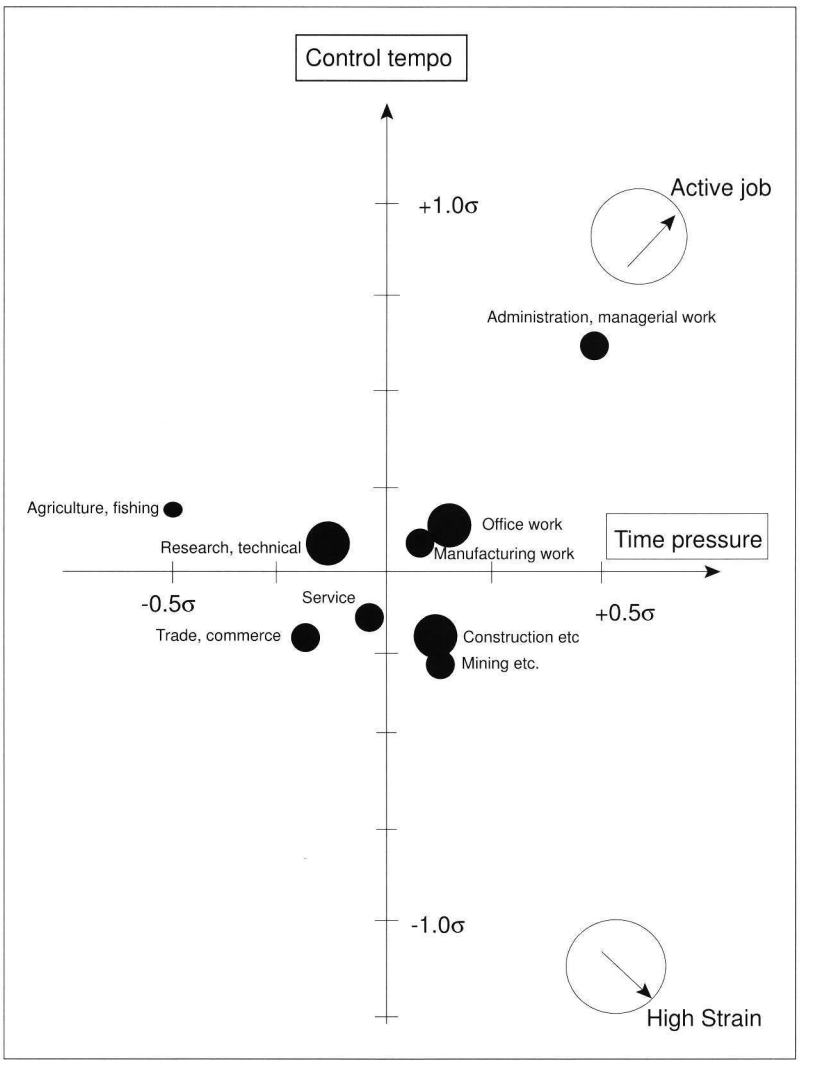


Figure 3.9 The occupational distribution of 'autonomy' and 'job demands' in the Danish Arbejdsmiljø 1995 (n=5575)

both the questions. It is the administrative and managerial jobs and the farming or fishing jobs which are outliers in the graph. Farmers and fishing jobs are situated in the low strain quadrant.

3.9 Sweden

Table 3.8 shows the distribution of the number of workers according to job title and describes the current job situation for three questions in the survey. Questions 61 and 88 show a high correlation in ranks between the different occupations. We will orient ourselves to question 88 in the analysis of autonomy.

Figure 3.10 shows the occupational distribution for the 1995 survey. From the 1995 survey, we can see that the extreme job categories are the health and nursing jobs, transport jobs, agricultural jobs and production and white collar jobs. One peculiar result is that the overall category 'health, nursing and social work' is situated in the low strain quadrant, but the category 'health and nursing work' is situated in the active job quadrant. This result can only be explained if the 'social work'-category is an outlier in the low strain quadrant.

Table 3.8 Distribution of number of workers according to job title in the Swedish Working Environment 1995 Survey

Job title	Number of workers (*1000)	Percent	0.62. time constraints	0.61. tempo autonomy	0.88. tempo autonomy
Technical and scientific work, military work:	1034	26	40.9%	41.6%	31.7%
• technical work	*277*	*7*	35.7%	29.2%	22.3%
• chemical and physical science work	*41*	*1*	38.2%	37.0%	32.4%
• pre-school teachers, recreation instructors	*233*	*6*	47.2%	56.8%	45.6%
• pre-school assistant teachers	*164*	*4*	40.0%	61.1%	53.3%
• social scientific, humanities, ...	*312*	*8*	42.9%	32.3%	19.1%
Health and nursing work, social work	583	15	39.6%	58.8%	58.9%
• health and nursing work	*288*	*7*	45.4%	68.2%	69.7%
Administrative, managerial and clerical	454	11	38.1%	40.3%	31.4%
• secretarial, typing work	*249*	*6*	34.9%	37.9%	30.7%
• data-processing works	*85*	*2*	32.3%	32.0%	21.5%
• other clerical and administrative work	*120*	*3*	49.1%	51.2%	38.4%
Sales work	379	10	42.3%	43.6%	42.0%
Agricultural, forestry and fishing work	119	3	25.3%	17.8%	24.1%
Transportation and communications work	215	5	36.2%	57.0%	63.5%
Production work, mining and quarrying	818	21	25.5%	42.5%	47.5%
Service work	359	9	34.8%	45.3%	44.7%
Total	2059		36.1%	44.8%	42.6%

Q61. Is it possible for you to set your own work tempo? (% workers more than 1/2 of the time)
Q62. Is your work sometimes so stressful that you do not have time to talk or even think of anything other than work? (% workers more than 1/2 time in this situation)
Q88. Is it possible for you to decide on your own when various tasks are to be done (for example by choosing to work a bit faster some days and taking it easier other days)?

3.10 European Foundation for the Improvement of Living and Working Conditions

In the 91/92 survey from the Foundation, a list of only twelve occupations (INRA-list) was used. In the 1996 survey, the ISCO-list was used. This new list was used to be able to better compare the results to the other national surveys. The job titles and number of respondents in these jobs can be seen in table 3.9.

In figure 3.11, the occupational distribution of time constraints and job autonomy is given for the questions 'autonomy method & order' and 'tight deadlines' in the European survey 1991. Figure 3.12 gives the same distribution, but this time for the scales job autonomy and job intensity. Because the job lists used by the Foundation are not very elaborate, these plots are not as detailed as one could wish for. The plots are remarkably similar and show some results in line with the Karasek-distributions. In both surveys, in the quadrant with high strain, we can find

Figure 3.10 The occupational distribution of 'autonomy when various tasks are to be done' and 'stressful work' (Swedish Working Environment 1995)

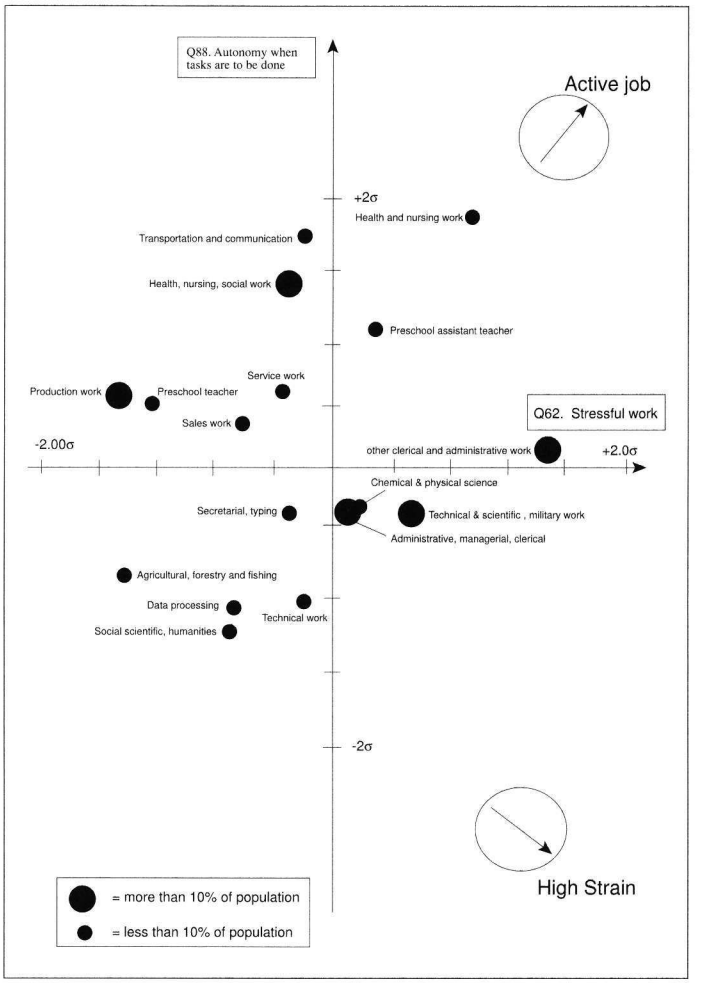


Table 3.9 Distribution of number of workers according to job title in the European survey on work conditions. (1991/1992; 1996)

EFILWC 1991			EFILWC 1996		
Job title	Number of workers	Percent	Job title	Number of workers	Percent
• farmer	548	4.3	• agricultural and fishermen	610	3.8
• fisherman	45	0.4			
• self employed professional	323	2.5			
• small self employed	1562	12.2	• professionals	1691	10.6
• professioanl worker	467	3.6			
			• technicians	1974	12.3
• general manager	598	4.7	• legislators and managers	1396	8.7
• middle manager	1724	13.4			
• office employee	1829	14.3	• clerks	2427	15.2
• non office employee	1729	13.5	• service and sales	2146	13.4
• supervisor	302	2.4			
• skilled manual worker	2422	18.9	• craft and related tradess	2672	16.7
			• plant and machine operators	1071	6.7
• manual worker	1270	9.9	• elementary occupations	1874	11.7
			• armed forces	125	0.8
Total	12819	100		15986	100

predominantly skilled blue collar workers and supervisors. In the whole of Europe these workers seem to be working at high demand levels, but they do not possess the possibility to change their working methods or job order. The consequences of this situation are treated further on in this report. Self employed professionals, professionals, middle managers and general managers are located in the active job quadrant. They are subject to relatively high job demands, but they also have the possibility to solve problems when they occur. As was remarked by Karasek, these jobs are not located in the risk zone for psychological strain. Non-office employees (probably warehouse keepers, clerks) and manual workers can be found in the passive job-quadrant. Farmers, (small) self employed and office workers also seem to have rather 'calm' working situations. They also have the possibility to change their working methods and work order. The only difference between the graphs is the positioning of fishermen. In the 1991 graph, they are located in the low high strain quadrant. In 1996, we can see that fishermen are united with farmers and are located in the low strain quadrant.

This whole picture surprisingly resembles Karasek's distribution of a sample of the US working population in the Quality of Employment Surveys from the seventies (Karasek and Theorell, 1990). It would seem, that for the variables looked upon here, jobs are carried out in the same way in Europe as in the US. All major European preventive policies in the seventies and eighties have not lead to a different distribution of jobs according to these dimensions.

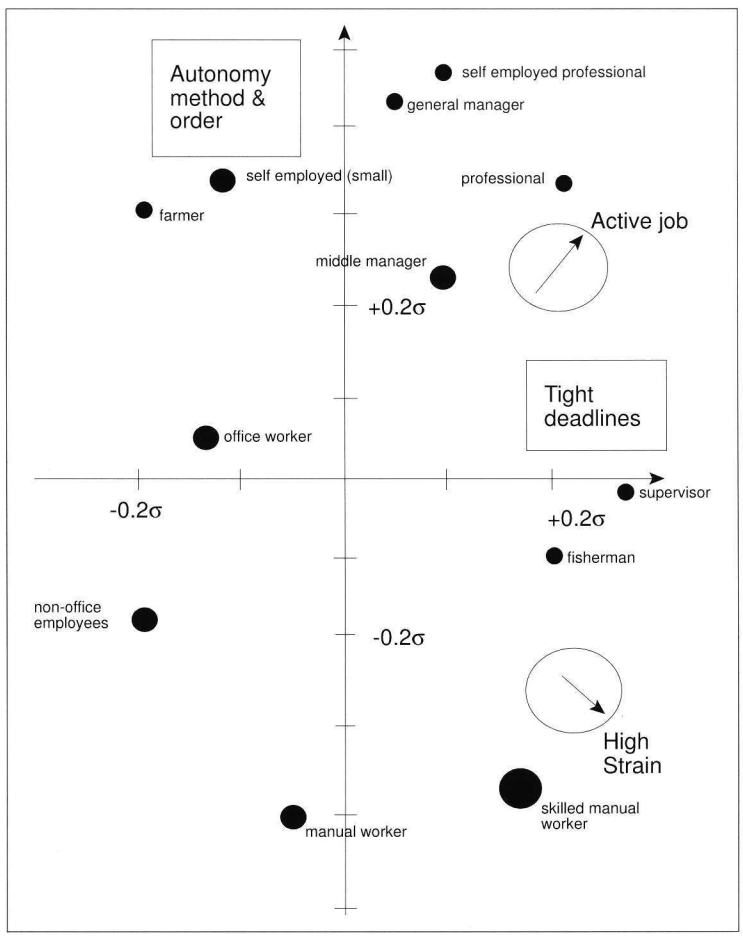
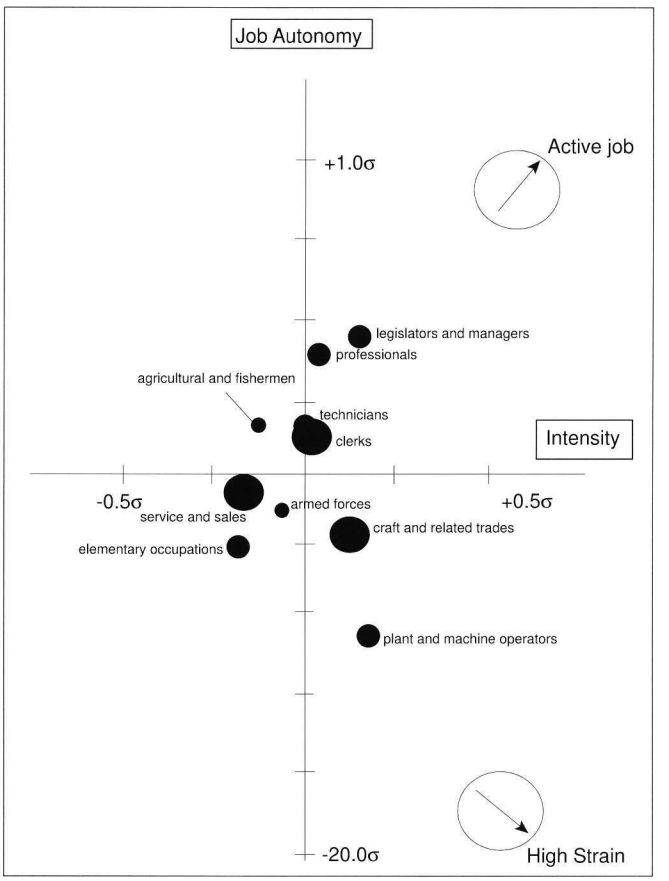


Figure 3.11 1991: The occupational distribution of 'autonomy method' and 'work to tight deadlines' (n=12819)

Figure 3.12 1996: The occupational distribution of 'autonomy method' and 'job intensity'. (n=15986)



3.11 Conclusion

In this chapter, we have looked upon the occupational distributions according to the Karasek-model. According to Karasek, such a method helps to confirm the objective validity of the model. We have looked at results from France, Finland, the Netherlands, Spain, West and East Germany, Austria, Denmark, Sweden and the Foundation. The results for Austria could not be included in this analysis, because there is no information available on job autonomy. In table 3.10, the data from the previous graphs are summarized.

Table 3.10 shows quite similar occupational distributions according to the four work situations for the different EU countries. The only country for which the results are surprisingly different, is Sweden. The results from the Foundation survey concur greatly with the results from the other surveys which supports the validity of the European survey. Passive jobs, jobs in which workers do not experience high demands for work but in which workers cannot control their working environment, are most common to unskilled blue collar workers. In some countries, large groups of skilled blue collar workers are also situated in this job category. In three surveys (Spain, France and the Foundation), civil servants and white collar service jobs are also dominant in this category. Administrative, scientific and service jobs are most prominent among the low strain jobs. East Germany shows a quite different picture in this sense that, certainly in contrast to West Germany, a whole series of skilled jobs are low strain jobs. One explanation for this could be the fact that in 1991 (when the survey was carried out), still a large group of these professionals were working

for big inefficient state companies. The most prominent group among the active jobs are all the managerial and white collar professional jobs. Blue collar jobs are mostly located in the high strain jobs. In France, only sales personnel are in this category.

In summary, the different national graphic distributions of jobs confirm to a great deal the continued existence in Europe of a tayloristic kind of division of work: managerial jobs have most

Table 3.10 Summary of occupational distributions according to four work situations in different surveys ('[ ]' = overlaps two categories)

Survey	Passive Jobs	Low Strain Jobs	Active Jobs	High Strain Jobs
Karasek 1989:	• watchman	• natural scientist	• electrical engineer	• fireman
USA	• stationery manager	• lineman	• farmer	• off. computer operator
	• billing clerk	• architect	• teacher HS	• health technician
	• sales clerk	• foreman	• manager trade	• gas station attendant
	• delivery man	• repairman	• public officials	• waitress
	• dispatcher	• machinist	• bank officer	• cutting operative
	• janitor	• carpenter	• clerk supervisor	• freight handler
	• miner	• programmer	• nurse	• nurse's side
	• construction labourer			• telephone operator
				• garment stitcher
				• keypuncher
				• assembler electric/ trans. mfg.
Finland	• agriculture, forestry, fishing	[• service work]	• technical, scientific judicial, humanistic and artistic	[• health care and social work]
	• production and construction		• managerial work	[• commercial work]
	[• service work]		[• health care and social work]	[• transport and communication]
	[• transport and communication]		[• commercial work]	• clerical work
	[• clerical work]			
The Netherlands	• construction worker	• secretary	• general manager	• chemical operative
1991	• electrotechnical operative	• accountant	• manager – administrative	• billing clerk
	• cutting operative	• accounting clerk	• manager – trade	• janitor
	• post office worker	• administrative clerk	• director	• physician
	• plumber	• computer operator	• law professional	• printing operative
	• forging operative	• fireman, police	• scientist	• dispatcher
	• skilled manual worker	• cook	• manager – production	• garment stitcher
	• chauffeur	• engineer	• sales clerk	• food and beverage operative
	• telephone operator		• carpenter	
	• unskilled operator		• manager – transport	
	• textile operater		• teacher	
	• machinist			

Table 3.10 continued

Survey	Passive Jobs	Low Strain Jobs	Active Jobs	High Strain Jobs
The Netherlands 1995	• garment stitcher	• accountant, cashier	• policy maker, managerial	• dispatcher
	• other service personnel	• secretary, typist	• other administrative jobs	• farmer, fisherman
	• mechanical operative	• janitor	• other commercial jobs	• construction operative
	• cook, waiter	• shop attendant, sales	• scientific researcher	• other production operative
	• cutting operative plumber	• electric operative	• supervisor production	
	• housekeeping personnel		• other transport operative	
	• machinist			
	• physician, nurse			
	• chauffeur, sailor			
Spain	• skilled operators		• managers	
	• service jobs		• intermediate managers	
	• unskilled workers		• white collar workers	
			• administrative secretary	
France (external demands)	• civil servants	• service jobs	• managers	• sales personnel
	• skilled operators		• public officials natural scientist	
	• agricultural workers		• supervisors	
	• unskilled operators		• teaching, health care	
			• technicians	
			• administrative professionals	
West Germany	• electric operative	• publisher, artist	• teacher	• other operatives
	• carpenter	• natural scientist, engineer	• security personnel	• fitter
	• forging operative	• sales personnel, services	• farmer	• food and beverage operative
	• printing operative	• administrative, secretary	• sales personnel products	• transport operative
	• fine mechanic	• physician	• household workers	• janitor
	• upholstering operative		• hotel personnel	• unskilled construction operative
	• mechanical operatives		• nurse, health care jobs	• paver
	• joiner			• miner
	• instrument maker			• chemical operative
	• chauffeur			• unskilled manual worker
	• painting operative			• glass, building operative
	• bricklayer			
	• machinist			

Table 3.10 continued

Survey	Passive Jobs	Low Strain Jobs	Active Jobs	High Strain Jobs
West Germany (continued)	• other transport operatives • dispatcher • cutting operative • metal construction operative • steel operative • textile operative			
East Germany	• carpenter • forging operative • printing operative • mechanical operative II • joiner • chauffeur • painting operative • bricklayer • metal construction operative • textile operative • paver	• publisher, artist • natural scientist, engineer • sales personnel services • electric operative • instrument maker • fine mechanic • mechanical operative I • other operatives • administative, secretary • physician • nurse, health care jobs	• teacher • sales personnel products • household workers • hotel personnel	• machinist • other transport operative • dispatcher • cutting operative • steel operative • upholstering operative • farmer • security personnel • fitter • food and beverage operative • transport operative • janitor • unskilled construction operative • miner • chemical operative • unskilled manual worker • glass, building operative
Denmark	• trade, commerce • service	• agriculture, fishing • research, technical	• administration, managerial work • office work • manufacturing work	• construction etc. • mining etc
Sweden	• secretarial, typing • agricultural, forestry, fishing • data processing • technical work • social scientific	• transportation and communication • health, nursing social work • service work • preschool teacher • production work • sales work	• health and nursing work • preschool assistant teacher • other clerical and administrative work	• chemical and physical science • technical and scientific military work • administrative, managerial, clerical

Table 3.10 continued

Survey	Passive Jobs	Low Strain Jobs	Active Jobs	High Strain Jobs
European Foundation for the Improvement of Living and Working Conditions 91	• non-office employees	• self-employed (small)	• self-employed professional	• supervisor
	• manual worker	• farmer		• fisherman
		• office worker	• general manager	• skilled manual worker
			• professional	
			• middle manager	
European Foundation for the Improvement of Living and Working Conditions 96	• elementary workers	[• technicians]	[• clerks]	• craft and related trades
	• service and sales	• agricultural and fisherman	[• technicians]	• plant and machine operators
	• armed forces	[• clerks]	• professionals	
			• legislative and managerial	

of the autonomy within organisations, blue collar workers are under great pressure to perform but they do not have the means to control their work problems. Another big part of blue collar jobs is characterised by dull work. These results are to a great extent comparable with the results from Karasek in the Quality of Employment Surveys in the seventies (Karasek and Theorell, 1990). There are some jobs which between countries are located in different quadrants. For these jobs, it would be interesting to investigate if national differences can explain the different positioning. Maybe working environment policies could account for the differences.

We have to remind the reader that a good comparison of the results from the different surveys is made difficult because of the differences in questions and survey techniques. The averages from the different surveys do not always have the same meaning. Another problem which reduces the comparability is that occupational categories differ to a great degree between countries. In some countries, the rather limited differentiation between jobs distorts the graphs to a great extent. For example, a more differentiated occupational distribution in the Spanish survey would have shown jobs in the four job cells.

Even if we take these problems into account, it remains a remarkable fact that these similarities appear and in some countries remain stable over time (EFILWC, Netherlands). One could contest that the validity of the surveys is questionable, such surveys could be reproducing some kind of social acceptable hierarchy between jobs and not a real division in stress risks or learning capabilities. High status jobs would be defining their jobs as demanding and challenging (in the

sense of high autonomy). Low status jobs would see their work as either straining or bringing no challenge at all. A definite answer to this question cannot be given here. It is however a central task for those working on surveys to investigate this matter. One has to remind oneself however that the questions on time constraints and autonomy have been asked of workers in very different ways and even languages. Even accounting for the different cultures, the different surveys produce similar hierarchies between jobs. From these results therefore, it remains safe to accept the internal validity of the survey results (Spector, 1994; Schmitt, 1994; Howard, 1994).

CHAPTER 4

EFFECTS ON STRESS AND/OR JOB SATISFACTION

4.1 Introduction

Karasek has tested his model by looking at different stress and satisfaction variables (1979; Karasek & Theorell, 1990). In his model, straining jobs should show higher degrees of stress symptoms than other less riskful working situations. More active jobs should show higher degrees of job satisfaction and job commitment. In this chapter, we will look at the predictive power of the different 'job demands-job control'-distributions in four different surveys. We will do this by including dependent variables from these surveys into the model. In section 4.6, conclusions will be formulated about the differences and similarities between the different countries.

4.2 Finland

The Finnish Quality of Work Life-survey shows results for health effects and commitment of workers. Figure 4.1 gives the results for the health effects. This figure shows that 'high strain' conditions are correlated with the highest scale score for health effects (15.4). There seems to be a strong main effect coming from job demands. If job demands are high, then health effects are badly affected. Autonomy moderates to a certain degree the effect from job demands.

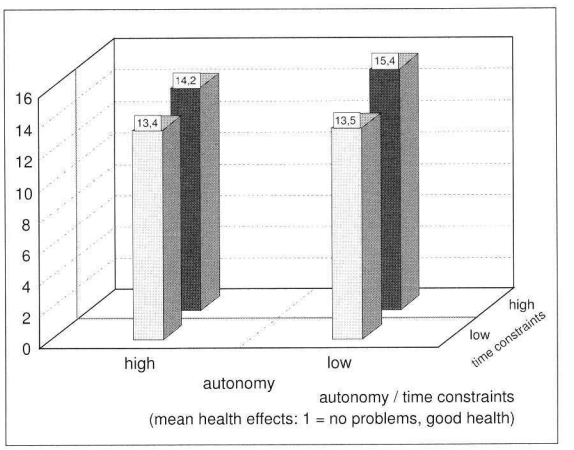


Figure 4.1 Finland: Time constraints, autonomy and health effects (n=3201)

4.3 The Netherlands

The burn-out scale in the Dutch Monitoring study is used to test the Karasek-model in the two samples. For the four work situations, we have calculated the average percentage workers who acknowledge that their health is at risk. In the 1995 survey, we have used the mean scale score. The number of subdivisions in each scale corresponds to the number of questions in each scale.

What are the results? In figures 4.2-3, the 'high strain' conditions show the highest scale scores for a higher degree of burn-out. Small divergences in the 1993 sample are caused by the limited number of respondents on which these averages have been calculated. These results are not as reliable as in the other cells. The 1995 survey shows a more consistent picture. In our opinion, both figures illustrate how strong the Karasek model can explain effects from working conditions. The 'low strain' condition shows the lowest percentage of complaints. These results are confirmed by a regression analysis. Each of the variables, also the interaction effects, show significant effects. More autonomy leads to lower complaints, more job demands lead to higher complaints, and the interaction between less autonomy and more demands leads to even higher complaints.

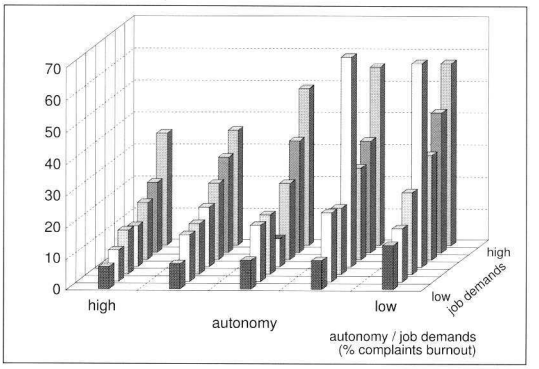


Figure 4.2 The Netherlands 1993: job demands, autonomy and burn-out (n=7717)

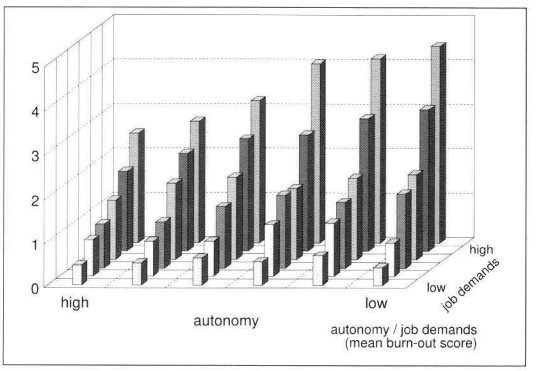


Figure 4.3 The Netherlands 1995: job demands, autonomy and burn-out (n=6543)

4.4 Germany

There are three questions in the German BIBB/IAB-study which can be used to test the Karasek model: the questions on 'job satisfaction in general', 'satisfaction with work content' and 'satisfaction with demands'. These three question can be summarised into a sumscale for job satisfaction. This scale is used for our analysis. There are no questions which measure health of the worker. For the four work situations, we have calculated the average satisfaction percentage (3=very unhappy, 12=very happy)*. The analysis of variance shows that all means are significantly different from one another ($p<.01$).

* We used the mirrored scores. In this way, the highest column shows the working situation with the highest degree of satisfaction.

West Germany

What are the results for the West German situation? In figure 4.4, the 'active job' condition shows the highest degree of satisfaction. This figure shows that passive jobs show an overall low job satisfaction. This figure supports an interaction effect between autonomy and job demands.

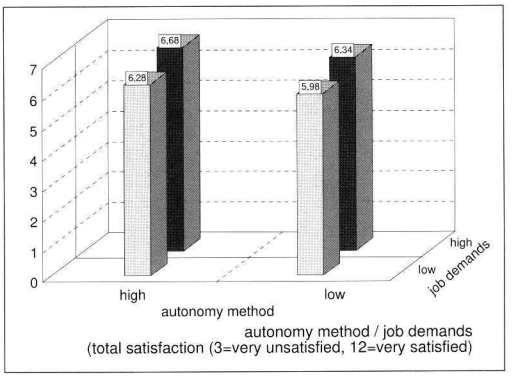


Figure 4.4 West Germany: Job demands, autonomy and total satisfaction (n=23.204)

East Germany

The East German situation shows the same results as for West Germany. In figure 4.5, the 'active job' condition shows the highest degree of satisfaction. Passive jobs show an overall low satisfaction. There is a main effect of job demands on satisfaction: if demands are high, then satisfaction with demands is high.

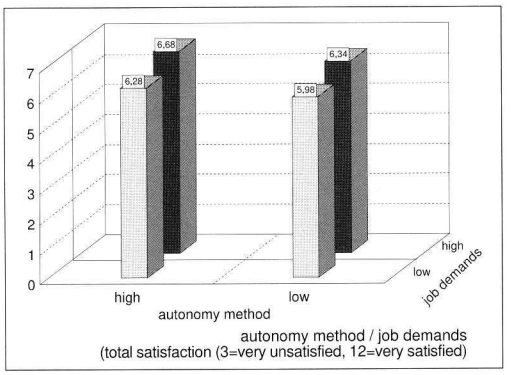


Figure 4.5 East Germany: Job demands, autonomy and total satisfaction (n=6.592)

4.5 European Foundation for the Improvement of Living and Working Conditions

In the 1991 survey, there is only one question in the survey from the Foundation that could be used as an indicator for stress effects: "Do you think your health or safety is at risk? (yes/no)". For the four work situations, we have calculated the average percentage workers who acknowledge that their health is at risk. We have also used multivariate techniques to test if the differences found between the means are significant. In the 1996 survey, there were several questions which could be used as dependant variable. The question about perceived stress: "Your work affects your health: yes, stress", is best suited for our purposes.

What are the results? In figures 4.6-7 the 'high strain' condition shows the highest percentage of workers who complain that their health or safety is at risk/ work affects stress. Although these questions are somewhat limited in content, this figure illustrates how strong the Karasek model can explain effects from working conditions. The 'low strain' condition in 1991 and 1996 shows the lowest percentage of complaints. Somewhat deviating from Karasek's figures is that the 'active job' dimension in both surveys still show a high percentage of workers with complaints.

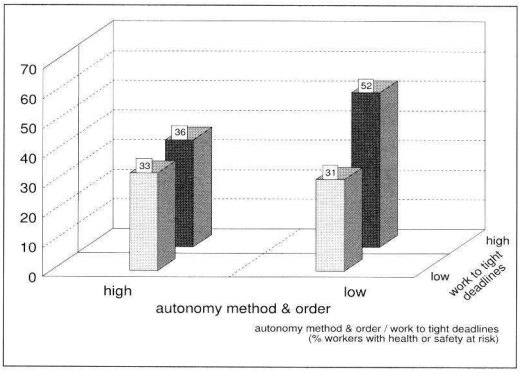


Figure 4.6 1991: European survey on working conditions: Job characteristics and perceived health safety at risk. (n=12819)

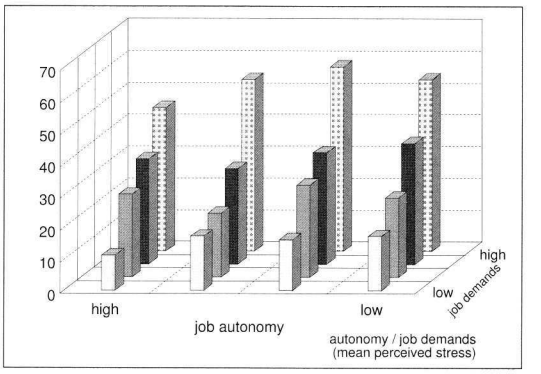


Figure 4.7 1996: European survey on working conditions: Job characteristics and perceived health safety at risk. (n=15986)

The 1991 model was tested in a logistic regression to find out to what degree the two work dimensions show a separate effect on work health and if an interaction effect between job demands and autonomy exists. An interaction effect would mean that both conditions together have an even stronger effect on work health than each of the variables taken separately. No interaction effect could be detected, only main effects seem to be in play which means that the 'high strain' condition is the result of the addition of both conditions. The logistic regression shows that only main effects are significant (p=.05). The interaction effect is not significant. From the logistic regression, it is clear that both work dimension have an independent effect on the question 'is your health at risk?' If a worker needs to work more to deadlines, then this is correlated with a feeling of health at risk. If a worker has a lower degree of autonomy, then this is correlated with a feeling of health at risk.

Table 4.1 EFILWC 1991: Job characteristics and perceived health or safety at risk. Results from logistic regression (p<0.01)

Health at risk:	Odds ratio	95% Confidence limits
• work to tight deadlines	2.181	2.002-2.377
• autonomy method & order	0.584	0.539-0.634
• interaction effect	n.s.	

(An odds ratio of 1 means that the independent variables have no effect on the dependent variable. An odds ratio greater than 1 means there is a positive effect on the dependent variable, an odds ratio smaller than 1 means there is a negative effect.)

4.6 Conclusion

Table 4.2 summarises the effects found in the previous figures and tables.

Table 4.2 Significance of effects in model

	Job demands		Autonomy		Interaction effect	
	Health	Satisfaction	Health	Satisfaction	Health	Satisfaction
• Finland	++		+		+	
• The Netherlands 1991	++		+/-		++	
The Netherlands 1995	++		–		++	
• West Germany		+		+		+
• East Germany		+		+		+
• EFILWC 1991	++		++		–	
EFILWC 1996	++		++		–	

(grey areas = not tested in this survey)

Strong effects are marked with '++', more limited effects are marked with a '+'. The indication is done in a qualitative way, judging from the distributions in the different charts. More quantitative analysis could prove different as is shown in the Dutch survey. From this table it is clear most surveys show results in line with the prediction of the Karasek model. Job demands and autonomy both have an independent effect on health risks and on job satisfaction or work commitment. Only in the Foundation survey, there seems to be no interaction-effect between job demands and autonomy. The results in these charts confirm the importance given to controlling both job demands and autonomy in the work situation. If companies want to contain their health situation and the commitment of their workers, they should look at the way their jobs are shaped.

CHAPTER 5

RISKFUL WORKING CONDITIONS ACCORDING TO SECTOR, GENDER, AGE

5.1 Introduction

In this chapter, we will look at the percentage of workers at risk (high time constraints and low autonomy) according to sector, to gender and to age group. The analysis will be limited to Finland, The Netherlands, Germany and the survey of the Foundation. Risk groups have been identified as those workers who score higher than the means on both risk conditions (quadrant 'high strain'). We will try to find out to what degree the different surveys give the possibility to identify risk groups or riskful sectors and to what degree risk groups are comparable between the countries. A problem with the sectoral analysis of the data is that sectoral classifications differ from one country to another (Dhondt, 1994).

5.2 Finland

Table 5.1 shows the percentage of workers at risk ('high strain' jobs) according to sector, gender and age-groups. Transport, banking and industry show the highest percentages of workers in 'high strain' jobs. The building industry seems to be the sector with the least 'high strain' jobs. According to gender, nearly a third of female workers are working in 'high strain' conditions. The percentage of 'high strain' jobs is higher in the older working population than in the younger working population.

Table 5.1 Finland: Percentage workers at risk according to sector, gender and age-group

Sector	% at risk	Gender	% at risk	Age-group	% at risk
Agriculture	19	Males	19	15-24	20.9
Industry	28	Females	29	25-49	24.0
Energy &	19			50+	27.6
Building	18				
Distribution	25				
Transport	31				
Banking	30				
Services	22				
Total	24				

5.3 The Netherlands

From table 5.2-3, the risk groups according to sector, gender and age can be seen according to the Monitor Stress and Physical Demands 1993 and 1995. Mainly service sectors (banking, services) show quite high percentage of workers with high strain jobs. In 1995, distribution sectors have a high percentage of high strain-workers. Building (construction), civil service and clothing sectors show low degrees of stressful conditions. Not all sectors are the same in the two surveys. The 1995 survey differs from the 1993 survey on several sectors.

Table 5.2 The Netherlands 1993 & 1995: Percentage workers at risk according to sector

Sector	1993 % at risk	1995 % at risk
Food	24.3	22
Fishing		25
Textile	25.2	
Clothing	20.5	
Graphic	25.8	24
Chemical	33.1	
Basic metal industry		15
Metal products/machine	34.6	
Metal products		18
Machine industry		10
Electrotechnical	32.1	13
Transport means	33.1	14
Building	7.1	20
Building construction		11
Distribution	33.6	
Distribution wood, construction		16
Distribution food		30
Banking & insurance	41.9	
Services	39.0	
Cleaning	23.1	
Transport		13
Civil service		11
Education		15
Health services		14
Social services		21

As in Finland, there is a higher percentage of female workers in 1993 working in high strain conditions than men. In 1995, this difference cannot be found. Older workers seem to be subject to more stressful conditions than younger workers. This result is the other way round in 1995.

Table 5.3 The Netherlands 1993 & 1995: Percentage workers at risk according to gender and age-group

Gender	1993 % at risk	1995 % at risk	Age-group	1993 % at risk	1995 % at risk
Males	26.6	14	15-24	29.7	15.6
Females	32.2	14	25-49	33.2	14.7
			50+	35.4	12.6

5.4 Germany

From tables 5.4-7, the risk groups in Germany according to sector, gender and age can be seen. The tables show clear differences in the division of 'high strain' jobs between West and East Germany. In West Germany, the sectors with the highest percentages of 'high strain' jobs are the postal services, mining, general stores, steel and textiles/leather. In East Germany, the 'high strain' sectors are railways, cleaning, paper industries, agriculture and metal products industry. West Germany shows more strain in public service-sectors, in East Germany more industrial sectors show higher percentage 'high strain' jobs. Mining, stone/glass/ceramic, metal products industry, cleaning and general stores are in both parts of Germany sectors with highest percentage than average for 'high strain' jobs. Churches, printing and insurances are the only sectors which have very low percentages with 'high strain' jobs.

Table 5.4 West Germany: percentage workers at risk according to sector (n=24267)

Sector	% at risk	Sector	% at risk	Sector	% at risk
1. Mining	33.3	15. Wood, furniture	22.1	29. Trade services	10.3
2. Chemical	24.9	16. Paper	21.3	30. Postal services	34.3
3. Stone, glass, ceramic	25.5	17. Printing	18.2	31. Railway	24.1
4. Steel	30.5	18. Textile, leather	30.4	32. Transport companies	15.3
5. Steel, wagons, ship building	25.5	19. Textile - skilled work	23.9	33. Banking	23.8
6. Machine	21.5	20. Food products	22.3	34. Insurances	16.4
7. Metal products - industry	29.8	21. Food products - skilled work	29.7	35. Hotel	21.8
8. Transport products - industry	21.5	22. Cleaning	29.9	36. School	14.7
9. Transport products - skilled work	15.3	23. Barber	26.1	37. General practitioner, free trades	18.2
10. Metal - skilled work	27.0	24. Other industries	22.0	38. Hospital	16.9
11. Electro	19.9	25. Other skilled work	20.7	39. Churches	14.1
12. Electro - skilled work	23.3	26. Specialised stores	25.5	40. Public services	27.8
13. Fine mechanics, optics	28.0	27. General stores	30.8	41. Television, radio	14.4
14. Construction	22.7	28. Wholesale	18.8	42. Other services	23.0
				43. Agriculture	23.9
				44. Energy	21.5
				No information	17.0

Table 5.5 West Germany: percentage workers at risk according to gender and age-group

Gender	% at risk	Age-group	% at risk
Males	20.5	15-24	31
Females	26.5	25-49	21
		50+	23

Table 5.6 East Germany: percentage workers at risk according to sector

Sector	% at risk	Sector	% at risk	Sector	% at risk
1. Mining	20.0	15. Wood, furniture	17.4	29. Trade services	11.9
2. Chemical	23.1	16. Paper	28.7	30. Postal services	19.1
3. Stone, glass, ceramic	21.0	17. Printing	4.2	31. Railway	30.5
4. Steel	19.0	18. Textile, leather	14.8	32. Transport companies	14.5
5. Steel, wagons, ship building	12.8	19. Textile - skilled work	19.8	33. Banking	12.8
6. Machine	20.9	20. Food products	12.0	34. Insurances	4.6
7. Metal products - industry	24.9	21. Food products - skilled work	19.1	35. Hotel	14.0
8. Transport products - industry	20.7	22. Cleaning	28.1	36. School	9.9
9. Transport products - skilled work	16.0	23. Barber	17.5	37. General practitioner free trades	12.7
10. Metal - skilled work	18.3	24. Other industries	20.4	38. Hospital	14.7
11. Electro	8.5	25. Other skilled work	14.0	39. Churches	5.5
12. Electro - skilled work	7.0	26. Specialised stores	10.6	40. Public services	15.5
13. Fine mechanics, optics	12.9	27. General stores	22.8	41. Television, radio	9.6
14. Construction	14.2	28. Wholesale	7.7	42. Other services	14.0
				43. Agriculture	26.1
				44. Energy	22.5
				No indication	9.4

Table 5.7 East Germany: percentage workers at risk according to gender and age-group

Gender	% at risk	Age-group	% at risk
Males	15.7	15-24	22.7
Females	15.6	25-49	14.7
		50+	15.3

In West Germany, there are more female workers in 'high strain' jobs than male workers. In East Germany, there appears to be no difference between males and females.

Age-group shows a similar distribution in West and East Germany. Younger workers are more exposed to 'high strain' jobs than younger workers.

5.5 European Foundation for the Improvement of Living and Working Conditions

Tables 5.8-9 show the percentage of workers which are working in high strain-working conditions on average in the European Union. As can be understood from the previous chapter, these working conditions can lead to higher complaints for stress and health. The European average for 1991

shows that transport and metal manufacturing (etc) have the highest percentage strained workers. The sectoral division in 1995 does not completely resemble the 1991 list. The 1995 distribution of strain among sectors does however reproduce the situation of 1991. Catering etc. is included in the Distributive trades categories. Taken separately, this sector shows a percentage of 27% of strained workers in 1995. In these figures it appears that agriculture (etc) and service sectors are relatively strain free. In 1991, men are working more in stressful conditions than women. This picture changes the other way round in 1995. Younger workers are more strained than older workers in both surveys.

Table 5.8 EFILWC: sector: percentage workers at risk (scales: 'autonomy' and 'job intensity >25% of time')

	Agriculture, forestry & fisheries	Energy, steel extr., chemical	Metal manuf., mecha. & electri.	Other manufac-turing	Building & civil engineering	Distributive trades, catering	Transport & communic-ation	Banking & Finance	Other Services	Average
EC 1991	26	36	40	38	37	27	41	24	24	30
EU 1995	21	29	–	–	29	20	29	26	25	24

Table 5.9 EFILWC: gender and age: percentage workers at risk (scales: 'autonomy' and 'job intensity >25% of time')

	Gender		Age-groups		
	Men	Women	15-24	25-49	50+
EC 1991	31	29	34	30	29
EU 1995	24	25	25	24	22

5.6 Conclusion

Table 5.10 compares the survey results from the different surveys for sector, gender and age group. One result that is common to all the surveys is that of the transport sector figures among the high risk sectors. Low risk sectors are not the same between the countries. If we look at the risks according to gender, then we can see strong differences between the countries, and between

Table 5.10 Summary table for 'high strain' jobs according to sector, gender and age-group

	Sector		Gender	Age-groups
	high risk sectors	low risk sectors		
Finland	transport, banking	building	female>male	older>younger
The Netherlands 1993	banking & insurance, services	building	female>male	older>younger
The Netherlands 1995	graphic industry, distribu-tion, fishing	building construction, civil service, machine industry	male=female	younger>older
West Germany	postal services, mining	trade services, churches	female>male	younger>older
East Germany	railway, paper	insurances, churches	male=female	younger>older
Europe 1991	transport & communication	distribution & catering	male>female	younger>older
Europe 1996	transport & communication	distribution & catering	male<female	younger>older

the results from the national surveys and from the European survey. The same divergencies can be seen for the risks according to age group. An explanation for these divergencies lies in the different composition of sample populations, the different measurement techniques, the differences in preciseness of measurement and the differences in questions used. All surveys (except the Netherlands) are national representative samples. Differences could therefore be accounted to differences between countries.

CHAPTER 6

TRENDS IN TIME CONSTRAINTS AND AUTONOMY IN EUROPE

6.1 Introduction

This chapter deals with the trends in the development of time constraints and autonomy for each of the separate countries, for as far as data is available. Building on the results from the previous investigations, we can now look at the development of time constraints and autonomy in Europe. As long as results are compared within one survey, there are few problems. Comparison between surveys is not possible on the percentages themselves, but is possible on the general trends. This is what is done in this chapter.

6.2 Finland

Figure 6.1 shows the development of time constraints in Finland from 1977 to 1990. No data was yet available on autonomy. Time constraints have risen in this period of time from 17% to 30% of the working population experiencing time constraints.

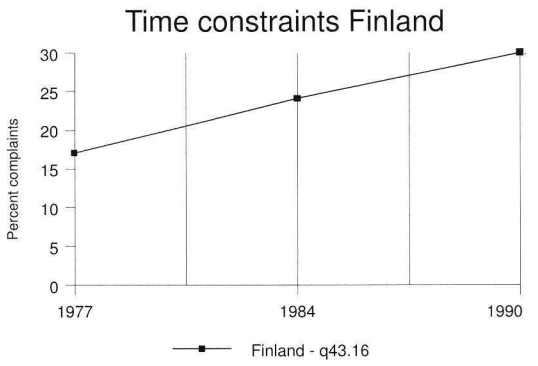


Figure 6.1 The development of time constraints in Finland: 1977, 1984 and 1990

6.3 The Netherlands

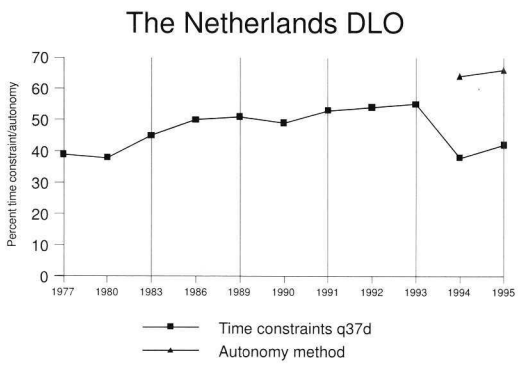


Figure 6.2 The Netherlands: development of time constraints and job autonomy

Figure 6.2 shows the development of time constraints and autonomy in the Netherlands in the DLO-surveys. Because the survey has radically changed in 1994 (answering categories, order of questions in survey and new questions), the figures are not really comparable with the past. The most important development in the DLO-survey is that of time constraints. It is the only percentage that has seen a continuous rise since the start of measurements (Houtman et al., 1997 (in press)). In 1994, there seems to have occurred a rupture in the series, mostly because by the rephrasing of the answering categories (from 5 to 3). In 1996, it is clear that the rise of time constraints is going on. This, and the rise in time constraints in the Netherlands as found in the EFILWC 1996, suggest that time constraints are still rising. These facts are confirmed by the two Monitor studies.

For autonomy, the questions had been phrased for the first time in 1994. The average scores have remained approximately the same over the two years.

6.4 Austria

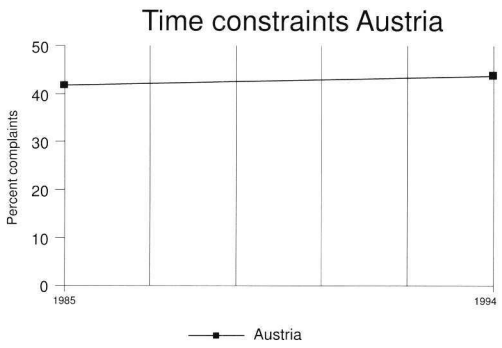


Figure 6.3 Austria: development of time constraints

As in the Netherlands and in Finland, the Austrian figures show a slight rise in time constraints over a period of approximately 10 years. It is also clear from the Austrian figures, that time constraints continue to rise, whereas we can see that other risks gradually disappear.

6.5 France

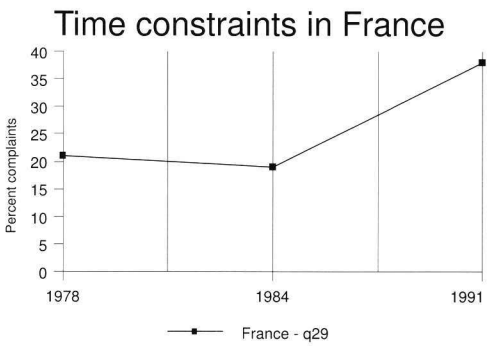


Figure 6.4 France: development of time constraints

Figure 6.4 shows that after a slight dip in the trend between 1978 and 1984, a dramatic increase in time constraints appears in France. This development is partly caused by a change in the administration of the questionnaire: the way the questions were presented to respondents, changed slightly (Dares, 1993). Most of the trend, however, is influenced by a real change in time

constraints in all sectors of industry. The trend is not influenced by gender, educational level of workers, number of employees per company or by sector.

6.6 West Germany

In West Germany, there is also a clear rise in time constraints over a period of eleven years. The questions on time constraints have changed somewhat during the years. Another significant change has also been the survey bureau which has carried out the survey. For these reasons, the BIBB/IAB does not use itself trend information from the survey. But if compared to other surveys, the similarities in the development of time constraints is remarkable.

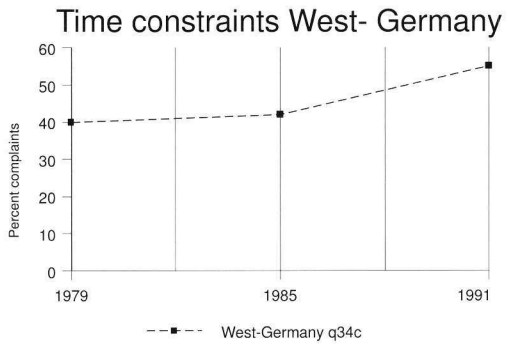


Figure 6.5 West Germany: development of time constraints

6.7 Sweden

In the following figure, we can see the development of time constraints and autonomy for Sweden. Both variables show a slight rise. The time gap is however somewhat smaller to detect tendencies.

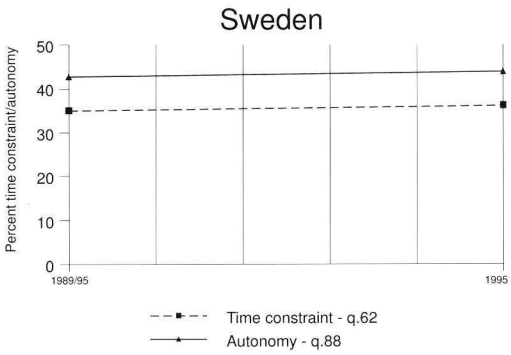


Figure 6.6 The development of time constraints and job autonomy in Sweden

6.8 European Foundation for the Improvement of Living and Working Conditions

As in the other countries, we can see that at the European level a strong intensification of work has occurred. For the two questions on time constraints (work tempo and deadlines), work has intensified. At the same time however, job autonomy has risen. This rise is not as strong as for time constraints, so we can see that high strain conditions have become more common.

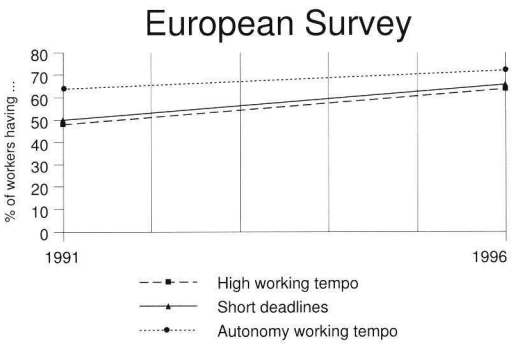


Figure 6.7 The development of time constraints and job autonomy in Europe

6.9 Conclusion

All surveys show a rise in time constraints in the last decennium. Because the surveys are independent from one another, these results give a strong indication that these trends are not purely measurement artifacts.

The trend in job autonomy is not as clear as for time constraints. The data for this last variable remains rather meagre. Most of the signs indicate that job autonomy is on the rise. This rise is not strong enough to compensate for the rising time constraints. This means that more and more workers are confronted with high strain working situations.

CHAPTER 7 DISCUSSION

The aim of the report was threefold:

1. to consolidate input from the various European and national questionnaires on the issue of time constraints and autonomy at work;
2. to provide a description of the situation based on the 1991 and 1996 European Surveys on Working Conditions carried out by the Foundation;
3. to give an overview of the situation in Europe on time constraints and autonomy at work.

To describe the situations on time constraints and job autonomy in the different countries, an analysis was required to show the comparability of the different surveys. This analysis had to be a validity test for the 'job demands-job control' model. The research questions for this study were:

- to which degree can the different questions on time constraints and job autonomy be compared?
- what is the validity of the 'job demands-job control' model based on the dimensions of time constraints and job autonomy in the different surveys?
- how do time constraints and job autonomy develop themselves in the European Union and the different member states?

What are the main conclusions in this report?

Questions about time limits and autonomy of method have been selected from the various surveys to consolidate the results. These questions are most common to the different questionnaires. The

results from the different surveys have been summarised in occupational distributions according to the time limits-method autonomy-model in the different surveys. Results have also been consolidated in tables which present the high strain categories according to sector, to gender and to age-group. Slight differences in phrasing and answering categories exist between the surveys. These small differences make it difficult to put the percentages of one survey next to another. General comparisons are however possible.

The validation of the questions on time constraints and autonomy in the European survey on working conditions has shown some mixed results. When looking at the occupational distributions according to the Karasek model, we can see that the different surveys show comparable distributions. Passive jobs, jobs in which workers do not experience high demands for work but in which workers cannot control their working environment, are most common to unskilled blue collar workers. Administrative and service jobs are most prominent among the low strain jobs. The most prominent group among the active jobs are all the managerial and white collar professional jobs. Blue collar jobs are mostly located in the high strain jobs. In summary, such a profile would confirm to a great deal the continued existence in Europe of a tayloristic kind of division of work: managerial jobs have most of the autonomy within organisations, blue collar workers are under great pressure to perform but they do not have the means to control their work problems. Another big part of blue collar jobs is characterised by dull work. These results are to a great extent comparable with the results from Karasek in the Quality of Employment Surveys in the seventies.

One must remain careful extrapolating results from such a comparison. We cannot make a very good comparison of the results from the different surveys because of the differences in questions and survey techniques. The averages from the different surveys do not always have the same meaning. A second problem which reduces the possibility of comparison is that occupational categories differ to a great degree between countries. In some countries, the rather limited differentiation between jobs distorts the graphs to a great extent.

The analysis of the predictive power of the job demands-job control model has shown concurring results between the different surveys. As in the Karasek model, high strain jobs lead to the highest health complaints, the lowest job satisfaction and the lowest work commitment. This result is also obtained by the European survey on working conditions, which supports the validity of the questions used in this survey.

The comparison of the percentage high strain jobs according to sector, to gender and to age-group does not show overall comparable results between the European survey and the national surveys. One result that is common to all the surveys is that the transport sector figures among the high risk sectors. Low risk sectors are not the same between the countries. If we look at the risks according to gender, then we can see strong differences between the countries, and between the results from the national surveys and from the European survey. The same divergencies can be seen for the risks according to age-group. An explanation for these divergencies lies in the

different composition of sample populations, the different measurement techniques, the differences in preciseness of measurement and the differences in questions used.

Given the divergent methodologies used in the different surveys, our main conclusion is that the comparability of results between the European survey and the national surveys is satisfactory.

Our last finding is that time constraints are clearly rising in the whole of Europe. This rise is clearly detectable in the European Survey. Most national research bureaus have sought to downplay this trend, but the resemblance of the trends between the different countries, makes it clear that this result is not a coincidence. Such a trend would indicate that there are rising problems in the different member states of Europe. The picture for job autonomy is not as clear. It could therefore be that rising time constraints are compensated by more decision latitude for workers. If such a result could be detected, then this would mean that jobs are becoming more active in Europe. However, the general picture is rather that high strain working situations are on the rise. More research is needed to confirm such a conclusion. The main conclusion from this analysis is that national and international surveys can bring about valid information about the working situation in the different countries and at the European level.

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Supplement

Content analysis of the different questions on time constraints, autonomy and dependent variables

Table 1 Comparison of questions on 'time constraints' in the different questionnaire-based surveys.

	Q	Questions	Dimension
Austria		Professional demands: work under time pressure	time limit
Denmark	47.	Is the amount of work you have to do so great that you do not have time to talk or think about anything else during working hours?	time limit
European Foundation	91/96: 8. 9.	Does your work involve: – working at very high speed? – working to tight deadlines?	 speed of tasks time limit
Finland	43.16 68a y128	Here is a list of various irritants in the work environment. Which ones apply to your job? –- Hurried pace and tight schedule Do you work under pressure? Do you have more time pressure than before?	 time limit/ speed job demands general time limit
France	29.	Your work rhythm, is it ordered by: e. production norms, or deadlines, to be respected in one hour or less f. production norms, or deadlines, to be respected in one day or less	 time limit time limit
Germany	 34.b	Can you tell me for this moment, how often you are confronted with following work condition in your daily work: – you are placed under strong deadline or performance pressure	 time limit/ speed
The Netherlands	Monitor	– do you work at high speed? – do you have to do a lot of work? – do you have to work extra hard? – do you have enough time to finish all your work? – is your job hectic?	scale: job demands
Spain	 81	Does your work involve: – working to tight deadlines?	 time limit
Sweden	64.	Is the amount of work you have to do so great that you do not have time to talk or think about anything else during working hours?	time limit

Table 2 Comparison of questions on 'autonomy' in the different questionnaire-based surveys.

	Q	Questions	Dimension
Austria			
Denmark	51.	Can you yourself decide when your various tasks are to be done? (1-4)	sequence
	54	Are you able to decide yourself how fast you work?	rhythm
	55	Are you able to help organise your work?	method
	60	Can you take short breaks to chat with someone more or less when you want?	rhythm
European Foundation	93:13	Do you have the possibility to choose or change:	
		a) your order of tasks or your methods of work?	sequence/method
		b) you speed or rate of work?	rhythm
	96:		
Finland	Scale	I can influence: a lot the working methods, work tasks, organising one's work, distribution of task, your own work rhythm, over with whom one works, over purchases of devices	
France	30./91	In doing your work, do you have the option of varying fixed deadlines?	sequence
	31./91	'Do superiors tell you how to do your work?' or 'Do superiors only give you a goal to work for, but you can yourself choose the working method?	method
	32./91	You receive orders, assignments, instructions. In order to perform this correctly, which of the following applies?	method
		– you carry out the assignments to the letter	
		– in certain cases, you act differently	
		– you act differently most of the time	
		– not applicable	
	33./91	When, in the course of your work, something abnormal occurs, what happens?	method
		– most of the time, do you fix the problem yourself?	
		– do you fix the problem yourself, but in very precise circumstances, planned in advance,	
		– do you usually call on other people?	
Germany	34	Your work is prescribed into the smallest detail.	method
	21	You have to finish a precisely defined number of pieces, a minimal performance or time.	rhythm
The Netherlands	Moni.	Can you decide for yourself how you carry out your work?	method
	93/5	Can you decide in which order you execute your tasks?	sequence
	(scale)	Can you decide when to execute a task?	sequence
		Can you leave your workplace whenever you want to?	workplace
		Can you interrupt your work any moment you find necessary?	rhythm
		Can you change your work rhythm whenever you like?	rhythm

Table 2 (continued) Comparison of questions on 'autonomy' in the different questionnaire-based surveys.

	Q	Questions	Dimension
Spain	95.	Can you change in your work:	
		– the order of your tasks	sequence
		– the method of your work	method
		– your work rhythm	rhythm
		– the distribution of the pauses in your work	rhythm
	97.	Can you stop or leave work if necessary?	workplace
	98.	Are you free to do your job according to your own insights?	method
Sweden	63.	Do you have the possibility of setting your own work tempo?	rhythm
	67.	Can you take short breaks to chat with someone more or less when you want?	rhythm
	85.	Can you partly decide on your own when various tasks are to be done (for example, by choosing to work a bit faster some days and taking it easier other days)?	sequence

Table 3 Comparison of questions on 'stress' in the different questionnaire-based surveys.

	Q	Questions	Dimension
Denmark	67	Within the past two years, have you felt pain or discomfort in your chest when you have been walking upstairs or have been running?	health effects id.
	68	Have you received treatment for high blood-pressure within the past three months?	id.
	69	Have you had heart trouble within the past three months?	
	76, 78, 79, 80, 87, 88, 89	Within the past three months, have you: – had heartburn, acid regurgitation, stomach ache, indigestion?, felt faint?, felt tired and run-down?, had a headache?, Been tired and felt that everything was too much for you?, Been nervous and unstable?, Had difficulty in sleeping?	id.
European Foundation		Is your safety or health at risk?	health effects
Finland	127	Do you consider your present work psychologically heavy?	psychological stress
		Lately, have you suffered at least once a week from the following stress symptoms?	health effects
	Scale 121	– headache, fatigue, difficulty in falling asleep, overworked, irritation, dizziness, depression, heart troubles, stomach ache	
France		–	–
Germany		–	–
The Netherlands	DLO	–	
	25/Monitor	Burnout-questionnaire	stress
		Questionnaire on health as experienced by workers (VOEG)	health effects
Spain *(only for '87)*	79	Do you ever feel tired after work, even when you haven't had to exert yourself physically?	health effects
	80	Do you ever experience any of the following symptoms after work?	
		– heaviness in the head, sleepiness, tired eyes, clumsiness, drowsiness, no energy for talking, nervousness, diminished concentration, total disinterest, forgetfulness, easily make mistakes	id.
Sweden	67	Within the past two years, have you felt pain or discomfort in your chest when you have been walking upstairs or have been running?	health effects
	68	Have you received treatment for high blood-pressure within the past three months?	id.
	69	Have you had heart trouble within the past three months?	id.
	76, 78, 79, 80, 87, 88, 89	Within the past three months, have you: – had heartburn, acid regurgitation, stomach ache, indigestion?, felt faint?, felt tired and run-down?, had a headache?, Been tired and felt that everything was too much for you?, Been nervous and unstable?, Had difficulty in sleeping?	id.

Table 4 Comparison of questions on 'job satisfaction' and 'job commitment' in the different questionnaire-based surveys.

	Q	Questions	Dimension
Denmark	64	I am: very unhappy with the work/neither one thing nor the other/very happy with the work.	job satisfaction
	65	My work: is not worthwhile/neither one thing nor the other/very worthwhile.	interest in work
European Foundation		–	–
Finland	?	If you would inherit or win in a lottery so much money that it would not be necessary for you to work any more, what would you do? (quit working totally, work only occasionally, shorten working hours, continue working)	commitment
France		–	–
Germany	35	All in all, how satisfied are you with your current work?	job satisfaction
	36	How satisfied are you with your work content?	job satisfaction
	36	How satisfied are you with your work pressure and job demands?	job satisfaction & psychological stress
The Netherlands	39./DLO Monitor	Do you have pleasure with your work?	job satisfaction
Spain	92	If you had the chance, would you change jobs? (+ motivation)	job commitment
(only for 1987)	93	Have you ever asked for a transfer or change of job within the company?	job commitment
Sweden		–	–

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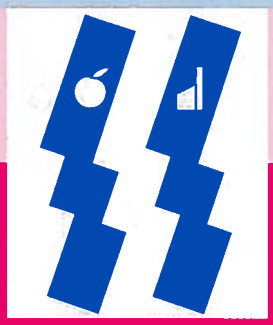

Time constraints and autonomy at work in the European Union

A clear picture of working conditions in Europe and of their trends is essential to the definition of prevention policies. The Foundation contributes to this task by carrying out a survey of working conditions in all Member States every 5 years.

The last Survey, carried out in 1996, has shown some worrying trends. One of those being the increase in the intensity of work. Many factors can help to explain such phenomena: increased competition, working time reduction, etc. At the same time, although the situation has improved, workers' control over their work remains low. These two trends may explain why one-third of workers report stress.

The Foundation felt a more in-depth analysis of these important issues was needed, using both Foundation and national data sources. The present report intends to provide policy makers with information on stress factors in the workplace and therefore ways of preventing stress.

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