

TIME CONSTRAINTS AND AUTONOMY AT WORK IN THE EUROPEAN UNION

This leaflet summarizes the main findings of a number of statistical surveys on working conditions carried out at European level by the European Foundation for the Improvement of Living and Working Conditions and at national level by several Member States (see table 1).

Results indicate that:

- **Work intensity** is increasing in all Member States: overall, workers work faster and to tighter deadlines.
- **Autonomy at work** is also on the increase, but this increase is not sufficient to compensate for the increased intensity of work. This means that more workers are confronted with work situations under great strain.
- Jobs can be divided into 4 categories:
 - **passive jobs**, which are characterized by low demands (low work intensity) and little control over the work environment (little influence on the pace of work and work organization). Those jobs are mainly held by unskilled blue collar workers;
 - **low strain jobs**, which are characterized by low demands and high control over the work environment (influence on the pace of work and work organization). Administrative and service workers are most prominent in this category;
 - **active jobs**, which are characterized by high demands (high work intensity) and high control over the work environment. Managerial and white collar professionals are most prominent in this category;
 - **high strain jobs**, which are characterized by high demands and low control. Skilled blue collar workers are most prominent in this category.
- **High strain jobs**, which are most likely to create occupational stress, are to be found mainly:
 - among **skilled blue collar workers**;
 - in the **transport** sector, in **catering** and in **metal manufacturing**;
 - among **young workers**;
 - equally among male and female workers (In 1991 the proportion of male workers in high strain jobs was higher than that of female workers).
- High strain jobs, that is to say jobs with high intensity and low autonomy, lead to a higher number of **health complaints** from workers (stress, burn-out). Overall 28% of workers report stress and 20% report burn-out.
- The profiles described above confirm to a large extent the on-going **tayloristic division of work** in Europe.



Time constraints and job autonomy are two major dimensions of work content. Workers are confronted with two types of **time constraints**. A first time constraint is formed by time limits such as deadlines. A second time constraint is formed by the speed at which workers need to perform their tasks. **Autonomy** refers to the possibility a worker has to control either the method of work or the order in the way a job has

to be executed. These two dimensions play a major role in controlling psycho-social stress at work (see figure 1). Stress at work is one of the major causes of sick leave and illness of workers. The data from the two Foundation surveys (see sources), make it possible to monitor the developments of time constraints and job autonomy.

This leaflet is a summary from a larger report on time constraints

and job autonomy in the European Union (see publications). This report is a consolidation of the results from the various European and national questionnaires on the issue of time constraints and autonomy at work. Data from the following EU Member States are presented: Austria, Denmark, Finland, France, Germany, the Netherlands, Spain, Sweden; and from the European Foundation.

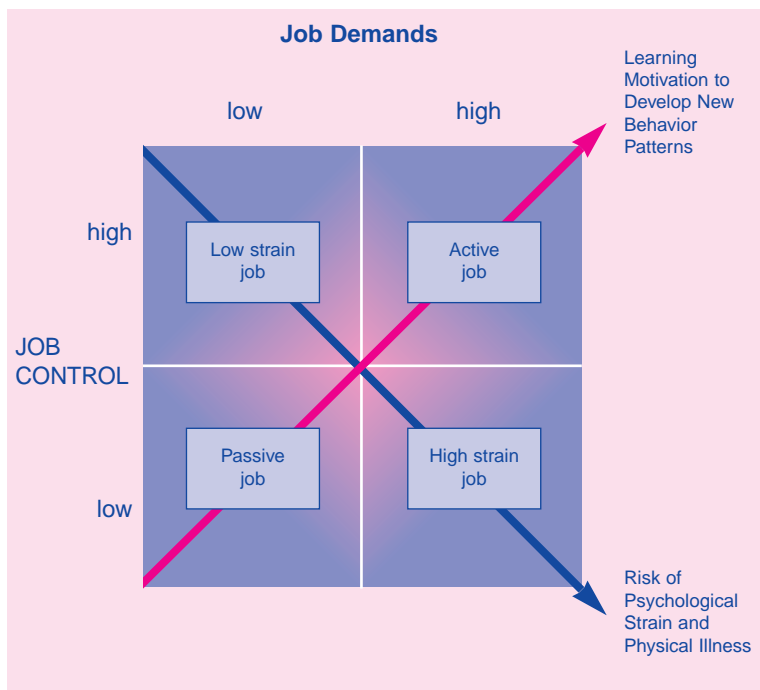
The ‘job demands-job control’ model: a “stress prediction” model

The model in which time constraints and job autonomy are joined is commonly known as the “job demands (= time constraints) - job control (= autonomy) model”, developed by the American researcher Robert Karasek. This model reflects to a high degree the working environment of workers. By changing the job demands or the job control, strain can be reduced and higher competency levels for workers can be achieved. Figure 1 summarises the four types of jobs that might result from the different combinations of job demands and job control:

- **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 on possible 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 possible conflicting demands;
- **low strain jobs:** in these situations, workers experience

low demands and have an excess capacity of control to deal with problems.

The model contains two predictions. Firstly, psychological strain increases as job demands increase, relative to decreasing job control. Secondly, 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.



Methods used in the report

A way to investigate time constraints and job autonomy is to make the effects more visible. A **first way** to do that is to see how jobs rate differently on time constraints and job autonomy. This method is a quick way to identify groups of workers or branches of industry with desirable or undesirable work situations. A **second way** is look at health effects in the different work situations. Do high strain work situations (high job demands, low control) really have detrimental health effects? The precise way in which the two analyses have been carried out, can be found in the report.

Figure 1 The “job demands — job control” model (Karasek & Theorell, 1990)



between the European survey and the national surveys. One result common to all surveys is the transport sector featuring among the high risk sectors. Low risk sectors are not the same for all countries. Looking at the risks according to gender, there are large differences between countries and between the results from the national surveys and the European survey. The same divergence can be seen for the risks according to age group.

There is a **visible increase in time constraints** in the whole of Europe. This increase is clearly

detectable in the European Surveys. The trends in the different countries resemble each other, which makes it clear that this result is not a coincidence. Such a trend would indicate that problems are increasing in the European Member States.

The picture for job autonomy is not as clear. The few results suggest **that job autonomy is also on the increase** in Europe. Therefore it would be possible that increasing time constraints are compensated by more decision latitude for workers. If such a result could be detected, it

would mean that jobs are becoming more active in Europe. However, the general picture is rather that high strain working situations are on the increase.

The main conclusion from this analysis is that time constraints and job autonomy indicators can help identify high strain jobs. These jobs have detrimental health effects. The European Survey on Working Conditions gives information about such detrimental work situations in the Europe Union.



EUROPEAN SURVEYS ON WORKING CONDITIONS

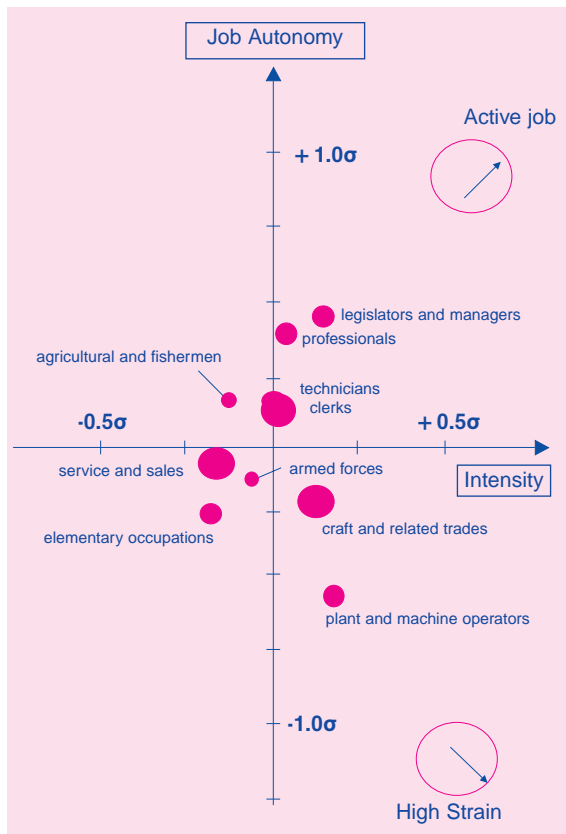
As social integration moves forward, and as the number of initiatives dealing with the work environment at Community level increase, more comprehensive and homogeneous data on the working conditions in the Community is required. The European Foundation for the Improvement of Living and Working Conditions has carried out two surveys (1991, 1996) on the working environment in Europe. These surveys have formed an important part of the Foundation’s work in the area of its programme concerned with improving the quality of employment and of working conditions.



<p>SOURCES</p> <ul style="list-style-type: none"> • DIRECTION DE L'ANIMATION, DE LA RECHERCHE, DES ÉTUDES ET DES STATISTIQUES. Conditions, organisation du travail et nouvelles technologies en 1991. Dossiers Statistiques du Travail et de l'Emploi. n° 90-91-92, Juin 1993. DARES, 1993. • EUROPEAN FOUNDATION FOR THE IMPROVEMENT OF LIVING AND WORKING CONDITIONS. First European Survey on the Work Environment 1991-1992. Dublin: EFILWC, 1992. 	<ul style="list-style-type: none"> • EUROPEAN FOUNDATION FOR THE IMPROVEMENT OF LIVING AND WORKING CONDITIONS. Second European Survey on Working Conditions 1996. Dublin: EFILWC, 1997. • FASCHING M. Arbeitsbedingungen. Hauptergebnisse des Mikrozensus-Sonderprogramms Juni 1994. Statistische Nachrichten 8/1996, 603-613. • HOUTMAN ILD, BLOEMHOFF A, KOMPIER MAJ, MARCELISSEN FHG. Werkstress risico's in bedrijf en beroep: secundaire analyse van Leefsituatie-Onderzoeksgegevens van 1977, 1983 en 1986. Leiden: NIPG-TNO, September 1991. 	<ul style="list-style-type: none"> • JANSEN R, STOOß F, Hrsg. Qualifikation und Erwerbssituation im Geeinten Deutschland. BIBB/IAB-Erhebung 1991/92. Berlin/Bonn: BIBB, 1993. • KARASEK RA, THEORELL T. Healthy work: stress, productivity, and the reconstruction of working life. New York: Basic Books, 1990. • MACARENA GARCÍA M, ALMODOVAR MOLINA A. Comparative study of five European questionnaires on working conditions. Barcelona: INSHT/CNCT, 1991
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This leaflet has been produced by Steven Dhondt, NIA-TNO B.V.





experience high demands for work but in which workers cannot control their work environment, are most commonly found among unskilled blue collar workers. Administrative, scientific and service jobs are most prominent among the low strain jobs. Supervisors and blue collar workers are identified as having the stressful jobs in Europe. Managerial jobs undergo a lot of time pressure, but they contain enough autonomy to control these time demands.

How to read the job profiles?

The horizontal axis refers to time constraints and the vertical axis refers to job autonomy. A job in the top right quadrant of the profile is subjected to high time constraints, but offers means to cope with these demands. In the lower right quadrant are high strain work situations. In this quadrant, work is stressful.

The dot size of each job reflects the number of people in that job in the survey sample.

Figure 4 European Foundation '96: The distribution by occupation of "autonomy" and "job intensity" (n=15.986)

High strain jobs are stressful

Another way to look at time constraints and job autonomy is to investigate the stress effects from certain work situations. In such an analysis, high strain jobs should show a higher degree of stress symptoms than work situations which are less at risk. In figures 5, 6 and 7, the stress effects in the Dutch "Monitor" survey and the two European surveys are shown.

The burn-out scale in the Dutch study is used as measure for stress effects. We have calculated the average scale score for four work situations. The highest column in the graph refers to the worst health score. In figure 5, the "high strain" condition shows the highest score, which means that workers have the highest percentage of health complaints. The "low strain" condition shows the lowest percentage complaints. The figure shows that the joint effect from high time constraints and low job autonomy leads to an extra negative health effect. Policy wise, it is only possible to

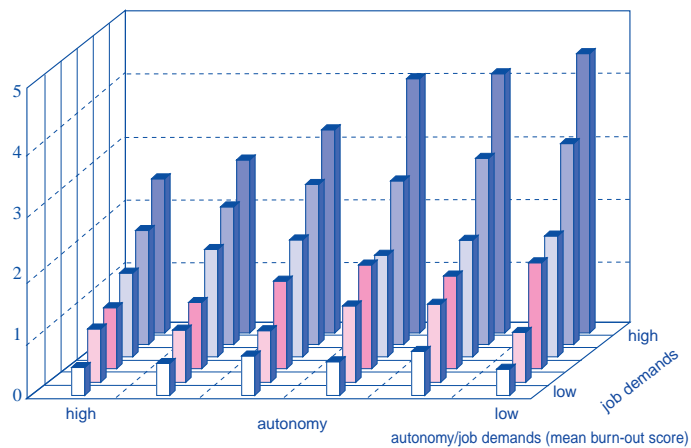


Figure 5 The Netherlands "Monitor" survey 1995: Job demands, autonomy and burn-out (n=6543)

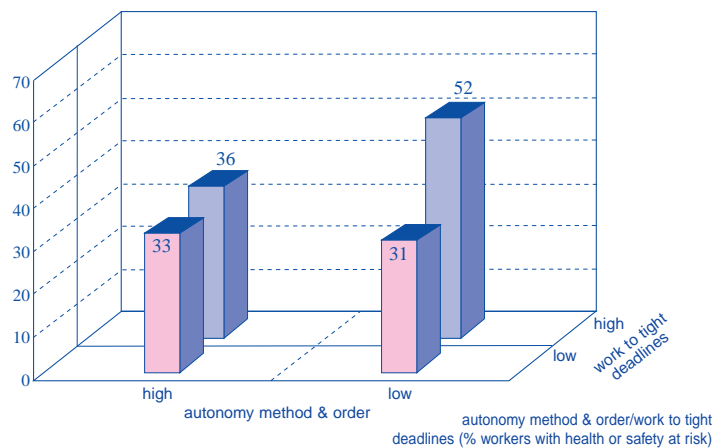


Figure 6 European Survey on the Working Environment 1991: Job characteristics and perceived health and safety at risk (n=12.819)



improve the health effects in this work situation by acting on both job dimensions at the same time.

Figures 6 and 7 show how work situations score on health in the whole of Europe. The “high strain” condition shows the highest percentage workers who complain about their health or safety being at risk. More than half of the workers in high strain work situations report that their health or safety is at risk. This result does not change over time. As a contrast to this situation, workers who do have high job autonomy and high demands, mostly managers, report significantly lower percentages of complaints: 36% in 1991 and 22% in 1996.

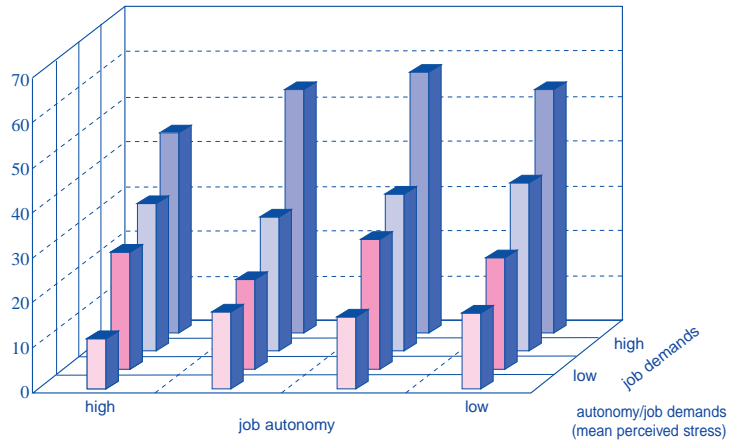


Figure 7 European Survey on Working Conditions 1996: Job characteristics and perceived health and safety at risk (n=15.986)

High strain sectors

Sectors most at risk have been identified as those sectors which score higher than average on both risk conditions (quadrant ‘high strain’). Figure 8 compares the results for the European surveys and the Finnish survey from 1990. In Finland, **transport, banking and industry** are the sectors with the highest percentages of highly strained workers. The building industry is the sector with the least “high strain” jobs. The European surveys show that **transport** and other industrial jobs are the high strain sectors. In these figures it appears that agriculture (etc.) and service

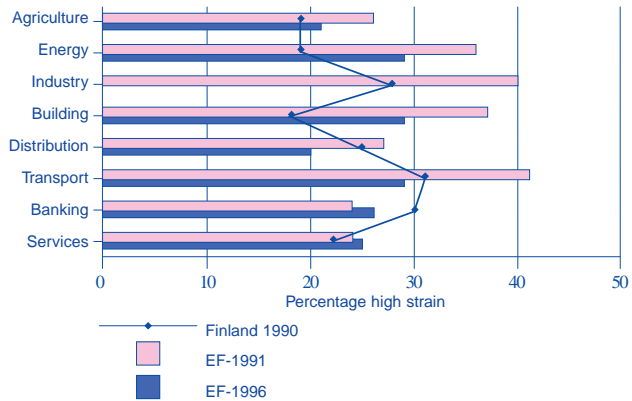


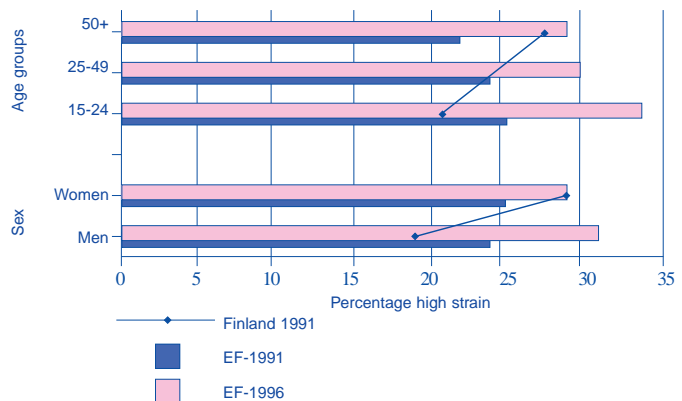
Figure 8 Sectors: comparison of workers at risk in Finland (n=3503) and the two European surveys on working conditions

sectors are relatively free of strain. The results do not change very much between the two surveys. One result common to all three

surveys is the **transport** sector appearing as the highest risk sector. Low risk sectors are not the same in the surveys.

Gender and age groups

Figure 9 compares the percentages of workers at risk (“high strain” jobs) according to gender and age group in the Finnish and European Surveys. The results are not that clear. According to gender, nearly a third of female Finnish workers are working in “high strain” conditions. Older workers in Finland are more likely to have a “high strain” job than young workers. According to the European Survey of 1991, more men than women are working in stressful conditions. This picture



changes around in 1996. In both surveys however, more young than older workers have a “high strain” job.

Figure 9 Gender and age groups: comparison of workers at risk in Finland and the two European surveys on the work environment

Increasing time constraints in Europe

Figure 10 shows the development of time constraints in the different surveys from 1977 to 1996. As not all surveys have data for the same years, we have clustered results for several years to make a comparison possible. The surveys show that time constraints have increased over this period of time. Finland, Austria, Sweden and the European Survey show a gradual increase in time constraints over a period of approximately 15 years. In Austria, “time constraints” is the only risk which continues to increase, whereas other risks gradually disappear. The Dutch survey (DLO) gives the only result which deviates somewhat from

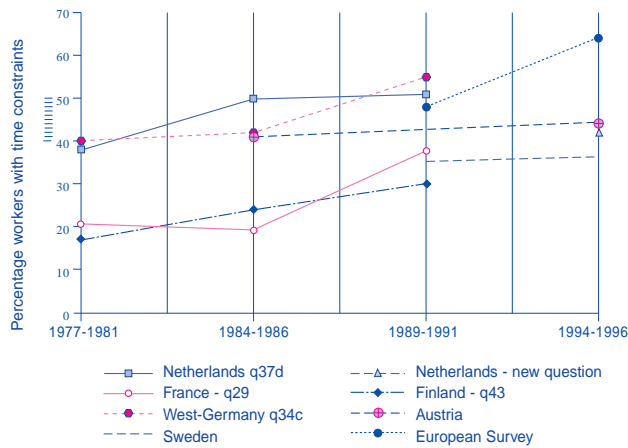


Figure 10 The development of time constraints in Europe

the other countries. But this result is mainly caused by the rephrasing of the answering categories (from 5 to 3). The results from 1995, compared to

1994, indicate that the increase of time constraints is on-going. These results make it clear that a strong intensification of work occurs in the whole of Europe.

Increasing job autonomy?

There are only a few results available on the variable ‘job autonomy’. Data from the two surveys on which we have trend information, show a slight increase in the degree of job autonomy. This increase is not as strong as the one detected for time constraints. This would mean that high strain jobs are becoming more common.

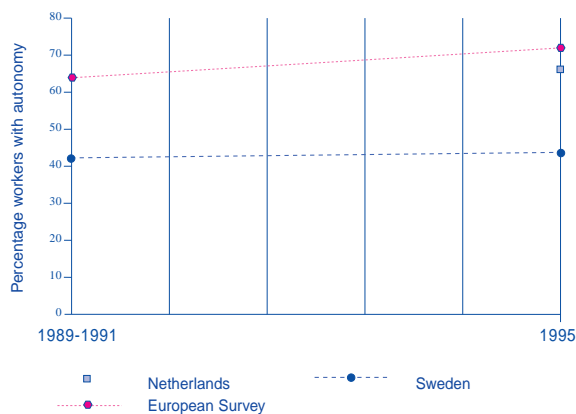


Figure 11 The development of autonomy in Europe

Main observations

The analysis of time constraints and job autonomy in the European Surveys on Working Conditions (1991; 1996) and in national surveys shows that:

Unskilled blue collar workers are mainly in passive jobs: workers do not experience high demands for work and cannot control their working environment. **Administrative and service jobs** are most prominent among the low strain jobs (few time constraints, a lot of

autonomy). **Managers and white collar professionals** make up the most prominent group among the active jobs (high time constraints, a lot of autonomy). **Skilled blue collar workers** are mostly in the high strain jobs. These workers must perform to high standards, but do not have the possibility to control their work.

Summing up, this profile confirms to a great deal the continued existence of a **tayloristic kind of division of work** in Europe: managerial jobs have most of the autonomy within organisations,

blue collar workers are under great pressure to perform but do not have the means to control their work problems. Blue collar workers’ jobs are to a large extent characterised by dull work.

High strain jobs lead to the highest **health complaints**. The surveys support the validity of the “time constraints-job autonomy” model.

A comparison of the percentages “high strain” jobs by sector, gender and by age group does not show overall comparable results

Job profiles for time constraints and job autonomy

The Danish survey (Arbejdsmiljø 1995) makes it possible to compare 9 major jobs. Figure 2 shows how these nine jobs score on the questions “working under time pressure” and “able to control work tempo”. This figure shows that the different jobs are spread over the four quadrants of the graph. Administration and managerial work, and office workers are situated in the active job sector.

Danish blue collar workers (mining, construction) have the jobs most at risk. These workers have to work under acute time pressure, but have little means to adapt their tempo to these demands. Farming and fishery jobs are situated in the low strain quadrant, which means that their work situation is calm. Most of the groups are situated near the average scores for both questions. The administrative and managerial jobs, and the farming or fishery jobs have extreme positions in the graph.

Figures 3 and 4 contain the distribution of jobs in the two European surveys (1991 and 1996). These two plots are remarkably similar. In both surveys, in the high strain quadrant (the worst working situation), we can find mainly 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 methods of work or order of tasks.

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. These jobs are commonly known as busy jobs, but from these graphs it is clear that busyness must not be confounded with stress.

Non-office employees (mainly warehouse keepers, clerks) and manual workers can be found in

the passive job quadrant. Farmers, self employed workers and office workers also seem to have rather ‘calm’ working situations. They also have the possibility to change their methods of work and order of tasks.

The only difference between the graphs is the position of fishermen. In the 1991 graph, they are located in the low high strain quadrant. In 1995, we can see that fishermen are united with farmers and are located in the low strain quadrant.

The job profiles from Denmark and the European Surveys resemble each other to a surprisingly high degree. Such resemblances were also found between other national surveys and the European surveys. This makes it clear that the European surveys present a valid picture of what happens in the different countries of the European Union.

The main conclusion from these graphs is that passive jobs, jobs in which workers do not

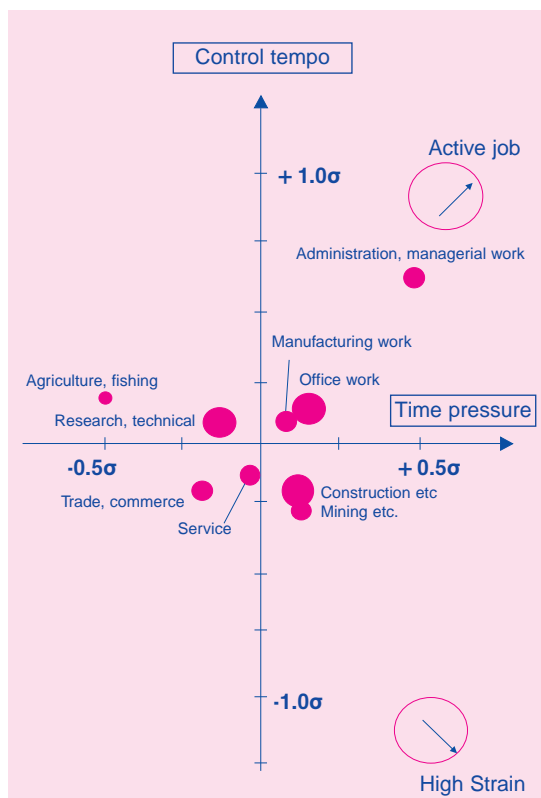


Figure 2 Arbejdsmiljø 1995, Denmark: The distribution by occupation of “autonomy” and “job demands” (n=5.575)

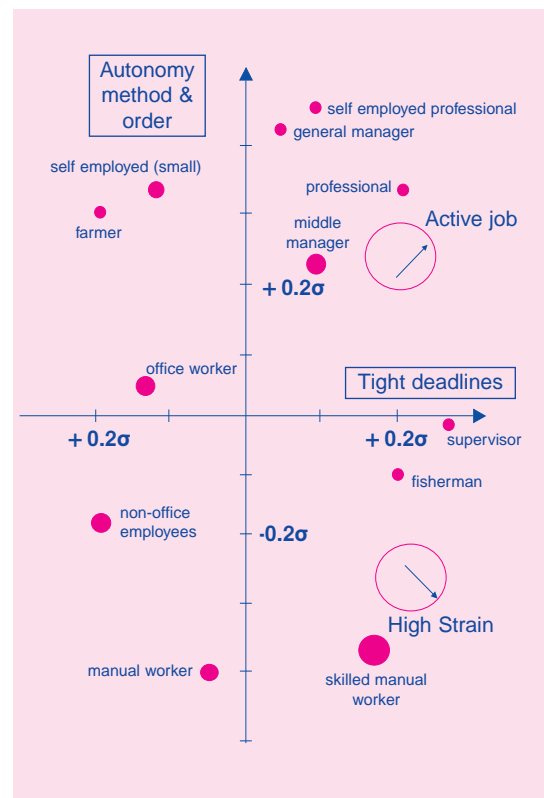
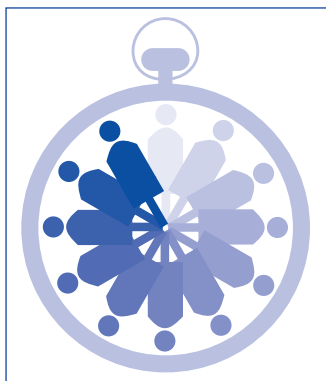


Figure 3 European Foundation '91: The distribution by occupation of “autonomy” and “working to tight deadlines” (n=12.819)



PUBLICATIONS

RELATED PUBLICATIONS

Foundation publications are on sale from the official sales agents of the EU or the Office for Official Publications of the European Communities, L-2985, Luxembourg. Where prices are not quoted, the document is free of charge and is available from the Foundation.

- 1. Time constraints and autonomy at work in the European Union**
Cat. No. SX-09-97-389-EN-C,
ECU: 20.00

- 2. Second European Survey on Working Conditions (1996)**
(available in disk format only).
Cat. No. SX-05-97-414-EN-Y,
ECU: 16.00

- 3. Second European Survey on Working Conditions (1996) (Summary report).**
Cat. No. SX-05-97-414-EN-C

■ A disk with the SPSS data in raw format is available from the Foundation, subject to certain conditions, by special request.

- 4. First European Survey on the Work Environment (1991-1992).**
Cat. No. SY-75-92-114-EN-C.,
ECU: 22.50

- 5. First European Survey on the Work Environment (1991-1992). (Summary report).**
Cat. No. SY-75-92-477-EN-C.

NEW PUBLICATIONS

New publications emanating from the information collected through the Second European Survey are to be published by the end of 1997. These are:

- 1. Working conditions and precarious employment in the European Union.**
- 2. Gender and Working Conditions in the European Union**
- 3. Working environment indicators in the European Union.**

FOR FURTHER INFORMATION

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