



Time constraints at work and health risks in Europe

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The third European survey on working conditions carried out by the European Foundation for the Improvement of Living and Working Conditions highlights the risks and dangerous working conditions that continue to pose a threat to workers' health, as well as the increase in time and organisational constraints at work. A study based on the statistical use of the data gathered from the survey provides a great deal of information on the organisation of working time. It also explores the links between the organisation of working time and the duration of working time, and the health risks to which workers in the European Union are exposed. Two reports have been drawn up on the basis of this study. Summaries of the conclusions of these reports are contained in this leaflet.

Working hours decline, but disparities remain

Between 1995 and 2000, the average number of hours worked by all European employees fell by one hour per week. This reduction was due both to the lower proportion of employees working more than 40 hours per week and the increase in the percentage of employees working 29 hours and less. In 2000, employees worked an average of 36 hours and 40 minutes per week. Full-time employees worked an average of 39 hours and 55 minutes per week. These averages mask a wide disparity: 17% of employees worked 29 hours or less per week, while 14% worked at least 45 hours per week. Despite a relative reduction in the range of working hours and a concentration of working hours at around 40 per week, there was still a great difference in the number of hours worked by employees in 2000.

Disparities between the countries of the European Union remain. In Belgium, Denmark, Greece, France and the Netherlands, average working hours are noticeably shorter than the 40 hours for full-time employees. The opposite is true for Spain, Ireland, Portugal, Finland and the United Kingdom where working hours remain over 40 hours per week.

The differences between socioprofessional categories are obvious. The hours worked by managers are well above the average. Among the other categories, manual workers are forced to work the longest hours, just over 40 hours per week, while employees, technicians and associate professionals and non-managerial staff work less than the average number of hours per week.

Table 1: *Breakdown of weekly working hours by occupational category*

	All workers	Men	Women	Full-time employees only	Men working full-time	Women working full-time
Senior managers	44.16	45.98	40.20	44.97	46.23	41.88
Middle managers	35.31	38.69	31.96	37.72	39.65	35.39
Technicians and engineers	36.80	39.76	33.78	39.73	40.32	38.89
Salaried employees	34.77	38.20	33.10	38.46	39.02	38.09
Sales workers	33.79	39.86	30.87	40.60	42.45	39.17
Agricultural and fishery workers	40.04	40.31	37.50	41.26	41.54	39.87
Craft-related trades workers	39.75	40.30	35.04	40.46	40.59	39.01
Industrial workers	40.20	40.94	36.48	40.93	41.29	38.90
Unskilled workers	32.69	36.83	28.09	38.57	39.20	37.39
Armed forces	41.49	41.91	33.82	41.71	41.81	39.14
All	36.74	39.99	32.53	39.91	40.84	38.19

The results show that older employees do not in fact work fewer hours than younger employees, regardless of the indicator used: average working time or breakdown by periods of working time. Women, for their part, work fewer hours than men, even when the impact of part-time work is taken into account, and regardless of the occupational category or country.

The longest working hours (45 hours and over) are more commonly found among men, managers, workers employed in private enterprises and certain sectors such as elementary occupations, construction, hotels and catering, and transport.

Rising trend in atypical working hours

Although regular, fixed, daily working hours are the most common, a considerable proportion of employees have 'atypical' working hours: 22% of employees work shifts, one third of which has two alternating shifts and another third with three or more. 19% of employees work at least one night per month, 47% at least one Saturday per month and 24% at least one Sunday per month.

Irregular working time is very common: 37% of employees do not work the same number of hours every day, 22% do not work the same number of days every week and 24% report fluctuating working hours every month.

Between 1995 and 2000, there was a slight reduction in weekend working while an increase in occasional night work was observed. The most striking trend was the increase in alternating shift work. The proportion of employees who worked alternating shifts rose from 15% to 17%.

There is no even breakdown by type, age or socioprofessional category of the various atypical working hours. Overall, women are less affected than men, especially with regard to night work (12% as against 24%). This is also true for those working three alternating shifts or more and having longer working days. On the other hand, there are no wide divergences between men and women regarding the types of atypical work common to the service sector, namely irregular working hours and weekend working.

With age, atypical working hours tend to drop, in particular atypical industrial working hours such as night work and shiftwork. Certain atypical working hours are more prevalent among particular occupational categories. Night work and shiftwork mainly affect industrial workers, long working days and irregular working hours primarily affect managers, and weekend working and fluctuating working hours mostly affect service and sales workers. The latter category is, as a whole, the most affected by different atypical working hours, with the exception of shiftwork.

Table 2: *Breakdown of employees working different atypical hours by occupational category (in %)*

	At least one night per month	At least one Saturday per month	At least one Sunday per month	More than 10 hours per day at least one day per month	At least one work schedule change per month	Shiftwork
Managers	19.3	48.8	26	53.8	30	9.7
Non-managerial staff	16.8	41.6	26.3	38.2	27.2	14.7
Technicians and associate professionals	22.2	46.1	30.7	32.8	29.2	25.4
Clerks	5	29.8	8.6	16.5	14.1	10.5
Service and sales workers	22.8	74.3	42.1	25	27.8	28.2
Agricultural and fishery workers	12.5	50.4	21.2	20.8	14.5	7.5
Craft-related trades workers	15.6	44.8	14.5	29.7	21.5	22.2
Industrial workers	34.9	50.5	28.1	31.7	28.8	42.7
Elementary occupations	14	45.2	20.1	14.9	19	23.2

Industrial and market constraints on the pace of work

Employees' pace of work is dependent on various constraints that can be grouped into two categories. Industrial constraints are related to efforts made to regularise production, namely production targets, speed of machines, the transfer of products. Market constraints result from the desire to adapt to customer demand in general.

Industrial constraints give rise to considerable pressure, with little flexibility. But generally these constraints are fairly stable and predictable. To manage them, individual and collective strategies of economy (of effort and/or time) can be implemented. Market constraints, on the other hand, are more flexible but less predictable. Here, operators can implement anticipatory and preparatory strategies, taking advantage of slack periods to ensure that they will not be caught unprepared at peak times. Operators who are unable to apply these strategies will find themselves to a large extent having to rush production, hence leading to a deterioration in working conditions.

In any given sector of the economy or profession, one or the other of these two models of organisation is generally dominant. Thus, industries involved in the manufacture of transport materials, textiles and clothing, paper, cardboard and wood, and chemicals have a high number of industrial constraints. On the other hand, financial institutions, healthcare and social services have considerable market constraints, ie. high levels of demand.

Industrial workers and, to a lesser extent, craft-related trades workers, are subject to considerable industrial constraints, while managers have to meet huge demand constraints, which lead, in particular, to frequent and unplanned interruptions.

Between 1995 and 2000, there was a decline in industrial constraints resulting from automatic machinery. On the other hand, the level of dependence on colleagues' pace of work increased: while not a characteristic typical of industrial organisations, this constraint is on the increase in such organisations. Market constraints

are also increasing. At present, for two thirds of employees, their pace of work is dependent in one way or another on fluctuations in demand. Over the last few years, industrial organisations have endeavoured to become more flexible and to follow the market closely, while many commercial activities or services have adopted certain principles adhered to by industrial organisations. As a result, industrial and market constraints are continuing to overlap.

When industrial and market constraints overlap, the strategies adapted to each type of constraint may be hindered by the presence of the other type: 'industrial constraints' do not take into account slack periods of work and eliminate any need for preparatory strategies, whereas 'market constraints' multiply unexpected production requests and thwart any balanced economy strategy, resulting in pressurised production and an accompanying deterioration in working conditions at least in the short term, though possibly for longer. If this hypothesis is correct, the overlapping of an industrial constraint with a market constraint will lead to an overall deterioration in working conditions far worse than that caused by the most damaging of the two constraints.

Intensity of work: impact on employees

The intensity of work reported by employees (working frequently at high speed, tight deadlines, not having enough time to complete a task) varies greatly depending on working conditions.

The feeling that work is carried out almost always at high speed is primarily caused by inflexible industrial organisations, implementing production targets and automatic machinery constraints.

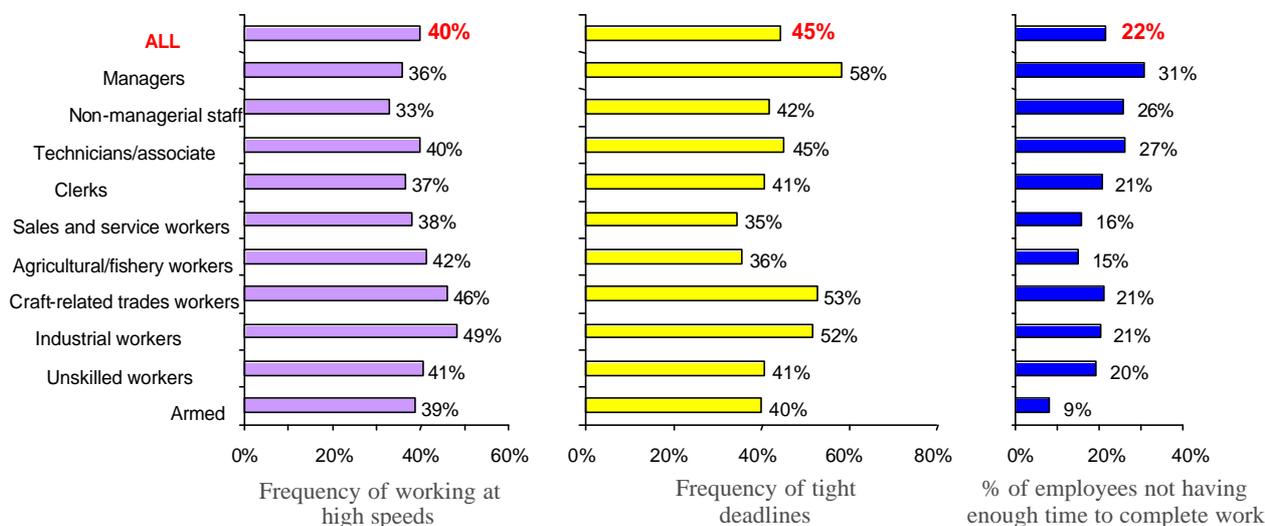
Tight deadlines are almost always prevalent in either more flexible industrial organisations, where the constraints may come from colleagues or quality requirements, or organisations that are a fusion of the industrial and market model.

The feeling of not having enough time to complete a task is especially common in situations where industrial and market constraints overlap. Moreover, it is extremely prevalent among employees exposed to interruptions on a daily basis. Such interruptions are often a sign of poor work organisation. Employees are either indifferent to interruptions or put up with them reluctantly. Interruptions which are considered by employees to be disruptive to their work, are caused at least as often by industrial constraints as by market constraints. Overlapping industrial and market constraints appear to be a source of stress. Market organisation is better able to cope with interruptions, whereas industrial organisation cannot tolerate them in the normal course of work. A mix of these two types of organisation can result in serious problems.

It would appear that a sense of control over one's own work and social support can mitigate against intensive working time, but cannot completely compensate for work intensity caused by poor work organisation.

An intellectually demanding job burden can be an aggravating factor, as well as repetitive work. Workers, especially young workers employed in mass-production industries, are particularly exposed to working at high speeds and to tight deadlines. Managers are also frequently obliged to meet tight deadlines and in addition, often do not have enough time to complete their work.

Figure 1: Breakdown of work intensity by occupational categories



It can therefore be observed that 36% of managers are subject to working at high speed and 58% to tight deadlines. Moreover, 31% report not having enough time to complete their work.

From 1995 to 2000, there was an increase in the intensity of work reported by employees. This trend is not fully explained by the breakdown of objective work-pace constraints. These constraints are possibly tighter: stricter targets, quicker machines, greater fluctuations in demand, etc. Perhaps, also, work has become more complex and workers have become less tolerant of their workload.

Sources of strain

Employees subject to considerable industrial constraints report suffering more from work pressure and being exposed to greater risks. Market constraints do not have a large impact, possibly due to the fact that the types of pressure and risks evaluated in the questionnaire mainly had to do with industrial contexts. However, when customers are involved in the work chain, this can lead to a significant deterioration in most working conditions, both actual physical damage as well as exposure to risks.

The results of econometric analyses shown in this leaflet support the hypothesis that both industrial and market constraints on the pace of work contribute to a deterioration in working conditions. However, the nature of the effects of these constraints on working conditions (and, just as probably, on work intensity) depends on whether they come from a material or immaterial source (e.g. production targets) or result from human factors (e.g. pressure from boss, colleagues or customers).

Where market and industrial constraints are simultaneously present, their effects are generally two-fold and sometimes there is even an overlapping effect. From this point of view, current developments in industry are likely to worsen the working conditions of employees. Admittedly, the increase in employee control nowadays is a positive trend. However, control over procedures (the choice of procedures to be used or the order in which to perform tasks) has only a limited impact on working conditions compared to intensity of work. In contrast, control over working time (the choice of working hours and breaks) has a more noticeable beneficial effect.

Health problems

Employees are increasingly inclined to believe that their work threatens their health and indeed report that their health suffers more if they are forced to work long hours. There is a distinct correlation between long working hours and employees reporting numerous types of work-related health problems, including headache, muscular pain, fatigue, anxiety and insomnia.

Certain atypical working hours, in particular night work, are perceived to pose a threat to workers' health and be a cause of fatigue. Employees working both long hours and irregular hours report that their health is particularly at risk. The large majority of these employees are middle-aged men, mainly belonging to four occupational categories: service and sales workers, managers, technicians and associate professionals, and industrial workers.

Table 3: *Breakdown of employees reporting work-related health problems (in %)*

	EU average	Working at least					Not working the same number of days per week	Shiftwork
		One night per month	One evening per month	One Sunday per month	One Saturday per month	More than 10 hours one day per month		
Health affected	59.4	68.3	66.3	66.9	63.4	69.9	65.8	67
Backache	32.8	39.6	36.5	39.4	36.7	37.8	38.3	40.4
Hearing problems	7.7	13.1	10.4	9.2	8.2	10.1	8.7	15.2
Stomach pains	4.1	7.8	5.5	6.5	4.9	7	5.5	6.4
Injury	7.4	11.8		9.8	9	10.3	10.3	10.3
Stress	28.1	36	35.7	36.9	32.4	40.5	25.9	34.6
General fatigue	22.3	28.8	27.5	29	25.8	29.2	27.1	28.9
Insomnia	8.2	18.2	12.8	15.1	10.6	13.5	13.7	15.4
Irritability	10.7	15.5	14.3	14.9	13.3	15	14.9	14.4

According to employees, industrial constraints impact significantly on the risks of succumbing to both physical and psychological health problems. Market constraints have a considerably negative impact on psychological health and a more varying impact on physical health. The impact from the customer's presence is greater than that of simple dependence on demand.

Daily interruptions are linked to a distinct and significant increase in all risks of illnesses recorded (reported by employees and attributed by them to their work). These interruptions, common to so-called 'flexible' and poorly-managed organisations, may well be a particularly harmful form of work intensification.

Work intensity is responsible for the feeling among workers of all ages that they will not be able to 'hold down' the same job until the age of 60. The most stressful forms of work intensity vary according to the worker's age. However, 'intensive' work is definitely not 'sustainable'. Although long working hours and considerable work intensity should never be present in the same job, since a priori these are two opposite ways of accomplishing a heavy task, unfortunately this is not always the case. Employees subject to the longest working hours are also in the group of employees forced to work at high speeds. These are therefore exposed to significantly high health risks.

The econometric study on the correlation between the pace of work and workers' state of health comes up against many methodological obstacles. The relationship between work and health is not one-to-one or immediate. One work characteristic often has several consequences. A worker's state of health in turn influences how he or she carries out their work. Many mechanisms linking work and health are progressive or divergent in nature. Persons able to perform a regular job are a priori known to be in better health than the general population: this 'healthy worker' effect is all the more marked in cases of difficult working conditions.

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