



Worklife in the Netherlands

Peter G.W. Smulders (editor)

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Netherlands Organisation for Applied Scientific Research TNO

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Preface

The division Work and Employment of TNO Quality of Life – with 200 employees – is a national centre of knowledge on working life issues in the Netherlands. TNO as a whole – with 4000 staff members – is the largest independent research and consultancy organization in the Netherlands, receiving structural, however partial funding from the Dutch government for innovative research and development. In consultation with the Ministry of Social Affairs and Employment, the division Work and Employment seeks to develop new approaches to work and organization. It supports the Dutch government as well as public organizations and the business community.

Its major fields of research are organizational issues, work pressure and stress, physical strain and repetitive strain injuries, absenteeism, work disability and rehabilitation, labour market issues and labour and health policies. The division Work and Employment is WHO Collaborating Centre Occupational Health and Dutch representative in the Partnership for European Research in Occupational Safety and Health (PEROSH) as well as in the European Association of National Productivity Centres (EANPC).

The OSH-research areas of other divisions of TNO (e.g. dangerous substances, work toxicology, noise, vibrations) are not central in this book.

This book reflects the major research areas of Work and Employment. Thus, it deals with relevant topics such as trends in work and health and with age, gender and business sectors as 'risk groups'. It focuses on working hours and overtime, computer work and working at home. Of course, it describes the legislative labour and social security context and how the Netherlands relates to other European countries with respect to work and health. The book is strongly based on representative datasets developed in agreement with the Ministry of Social Affairs and Employment to monitor work and health in the Netherlands since the year 2000.

I am proud that this book has been published and congratulate the authors. I believe the book will provide the reader with a broad picture of the actual situation in important aspects of the work environment in the Netherlands. I hope it will stimulate international collaboration and the discussion on the future of work and health among government officials, social partners and professionals.

Dr Frank Pot
Director Research
TNO Quality of Life

Chapter 1

Employment and productivity in the Netherlands

Peter Smulders & Seth van den Bossche

Summary

- With more than 16 million inhabitants, the Netherlands is one of the larger nations in Europe.
- About 47 percent of the Dutch population **of all ages** works 12 hours or more, with or without a social benefit or old age pension. Fifty-three percent of the population does not work 12 hours or more.
- Among the 16 million inhabitants in the Netherlands there are 13 million natives and 3 million migrants, which is 19 % of all inhabitants. Most migrants in the Netherlands are from Surinam, the Antilles, Turkey and Morocco.
- Male labour participation first grew from 64% in 1992 to 67 % in 2000 and 2001, but decreased to 62 % in 2005 (men aged 15 years and older working 12 hours or more a week). Female labour participation increased continually from 34% in 1992 to 44% in 2005.
- The increase in the labour participation of older persons is impressive. In the period 1993-2004 the participation of younger persons (15-24 years old) remained at the same level as in 1993 (about 40 %). In the 25-49 age group the participation increased from 70 to 79 percent. But in the 50-64 years age group the participation rose from 36 to 51 percent, which is generally considered to be quite spectacular.
- Compared to the EU, the Netherlands – together with Belgium, Luxembourg, Denmark, Sweden, and the UK - is a typically service-oriented country. In the 25 EU-countries 28 percent of the employed persons aged 15 and older work in industry (in the Netherlands only 20 percent). In the EU-25 about 67 percent of the employed work in the market and non-market service sector (in the Netherlands this percentage is about 77 percent).
- The Netherlands is among the countries with the highest educational level in the EU-25. Almost 50 % of all workers are highly skilled non manual workers.
- The jobs created in the Netherlands during the past decades were to a large extent part-time jobs and flexible jobs.
- In 2004-2005 the Netherlands was, within Europe – together with the United Kingdom, Ireland, Denmark and Austria - among the countries with the lowest unemployment rates.
- The trends in work and working conditions presented in this book should be interpreted against the background of these labour market changes.

1.1 Introduction

In the US and many European countries periodical reports are published about the state of the workforce, the work environment or the quality of work life. Examples are those from the U.S. Department of Labour (Chao, 2001), the Spanish National Institute on Safety and Hygiene at Work (Almodóvar et al., 2004), the Swedish National Institute for Working Life (Skiöld, 2000; Marklund, 2000; Thörnquist, 2001; Von Otter, 2004; Gustafsson & Lundberg, 2005), the German Federal Employment Agency and the Federal Institute for Vocational Education and Training (Jansen, 2002) and Statistics Finland (Lehto & Sutela, 2005). In addition, Eurostat publishes its Labour Force Survey results (Eurostat, 2003) and the European Foundation for the Improvement of Living and Working Conditions periodically publishes its European Survey on Working Conditions (Paoli & Merlié, 2001).

As far as the Netherlands is concerned, in 2004 TNO Work & Employment published the fourth Trends in Work in the Dutch language (Trends in arbeid 2004, Houtman, Smulders & Klein Hesselink, 2004). Furthermore, in 2005 TNO Work & Employment (Houtman & Van den Bossche, 2005) published a report on Trends in the Quality of Work in the Netherlands on the website of the European Foundation for the Improvement of Living and Working Conditions (EF/05/167/EN).

These developments triggered a group of researchers from TNO Work & Employment to write a book about worklife in the Netherlands. This book firstly deals with labour law and social security legislation in the Netherlands (chapter 2). Then trends and risk groups in working conditions are depicted and work in the Netherlands and the EU is compared (chapter 3 and 4). Chapter 5 presents the differences in work and health with respect to gender and age. Part-time and overtime work is focussed on in chapter 6. VDU-work and working at home and working from home is the issue in chapter 7. Finally, the main subject of chapter 8 is the health of workers, absenteeism and work disability and chapter 9 deals with occupational accidents.

To properly understand the context wherein worklife is placed, it is necessary to give the reader more information about the main characteristics of the Dutch labour force, about labour force participation, unemployment and what the main issues in the employment debate are nowadays.

1.2 Population and labour force

With more than 16 million inhabitants, the Netherlands is one of the larger nations in Europe. As shown in Table 1.1, 47.4 percent of the Dutch population **of all ages** works 12 hours or more¹), with or without a social benefit or pension and 52.6 percent of the population does not work 12 hours or more.

¹ Working 12 hours or more is the criterion used by the Netherlands Ministry of Social Affairs and Employment and Statistics Netherlands for deciding whether someone is working or unemployed. The internationally accepted ILO-definition defines people working 1 hour or more as being employed.

Table 1.1 The working and non working population in the Netherlands in 2003

	Males	Females	Total	Total in %
Total population all ages	8,043	8,208	16,251	100 %
Working (12 hours or more)	3,978	3,073	7,051	43.3 %
Working with a social benefit	215	149	364	2.2 %
Working with a pension	155	98	253	1.6 %
Working with a social benefit and a pension	30	21	51	0.3 %
Working: total	4,378	3,341	7,719	47.4 %
Non working: social benefit	486	549	1,035	6.4 %
Non working: pension	987	1,403	2,390	14.7 %
Non working: social benefit and pension	122	97	219	1.4 %
Non working, without social benefit or pension	2,070	2,818	4,888	30.1 %
Non working: total	3,665	4,867	8,532	52.6 %

Source: Statistics Netherlands/Central Bureau of Statistics, Statline, 2006

As can be seen in Table 1.1, about 4.3 million males and 3.3 females were working in 2003, which is 57 and 43 percent respectively.

Table 1.2 gives a picture of the working and non working population from another perspective. Among the 16.2 million inhabitants in the Netherlands there are 13.1 million natives and 3.1 million migrants, which is 19 % of all inhabitants. Most migrants in the Netherlands originate from Surinam, the Antilles, Turkey and Morocco. Migrants are underrepresented among employees (16 % versus 19 % of the total population), self employed (13 %) and persons with a pension (11 %) and are overrepresented among persons with a social benefit (28 %), see Table 1.2.

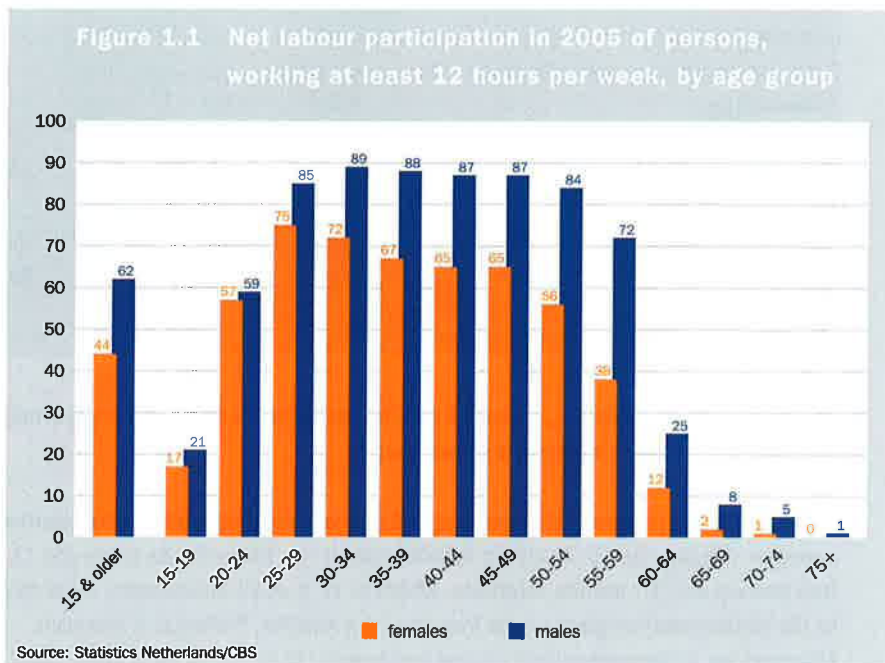
Table 1.2 The working and non working population, by natives and migrants (2003)

2003	Total population	Employees	Self employed	Persons with a social benefit	Persons with a pension
x 1000					
Natives	13,167	5,930	718	1,198	2,580
Migrants	3,084	1,138	112	471	333
Total	16,251	7,068	829	1,669	2,913
in %					
Natives	81 %	84 %	87 %	72 %	89 %
Migrants	19 %	16 %	13 %	28 %	11 %
Total	100 %	100 %	100 %	100 %	100 %

Source: Statistics Netherlands/Central Bureau of Statistics, Statline, 2006

1.3 Labour participation in 2005

In total, 53% of the Dutch population aged 15 years and older was actually in employment in 2005 (for 12 hours or more). As Figure 1.1 shows, there is still a substantial difference between males and females.



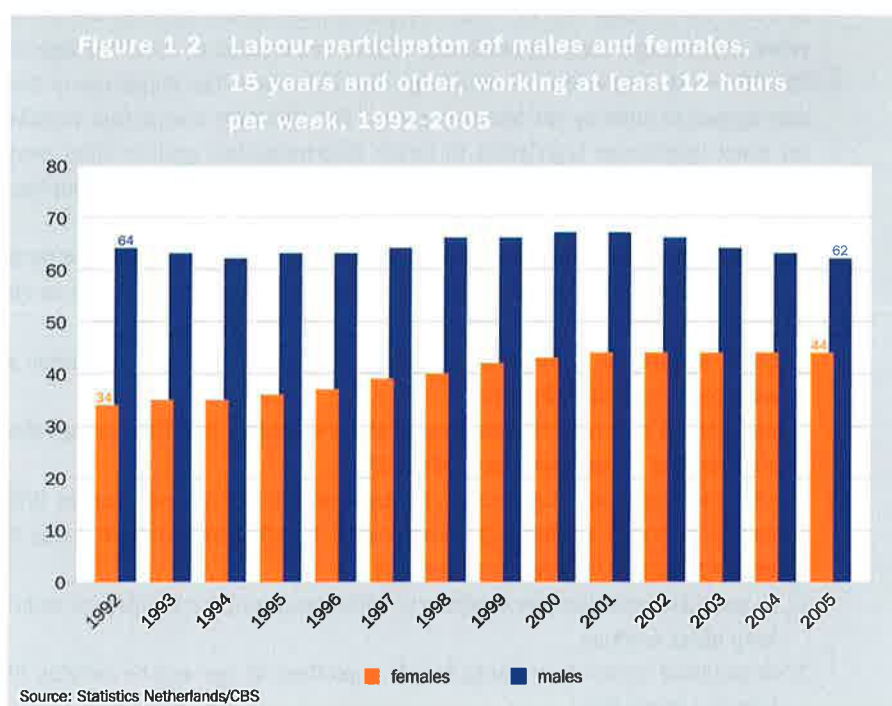
About 62 % of the male population and 44 % of the female population (aged 15 years and older) work 12 hours or more a week.

Using the internationally accepted ILO-definition, which includes people working 1 hour or more, labour participation in the Netherlands is higher of course. Then the employed labour force as a percentage of the population aged 15-64 years was 69% for men and 53% for women.

Furthermore, Figure 1.1 shows that labour participation is highest among the 25-50 year old men. They are employed for about 85 % or even a little more. Women in the same age groups are employed for about 65-70 %. The highest labour participation among females is when they are 25-29 years old. More than 75 % of this age group is employed. In particular, in the age group 55-59 and 60-64 the labour participation of women was low: 38 % and 12 %. Based on the labour participation of younger women today, it may be expected that the participation figures of older women will increase in the future.

1.4 Trends in labour participation by sex

As can be seen in Figure 1.2, labour force participation of female workers increased greatly during the last decade. In the period 1992-2005 male labour participation stayed more or less at the same level or even declined. It first grew from 64% in 1992 to 67% in 2000 and 2001, but it decreased to 62% in 2005 (males aged 15 years and older working 12 hours or more a week). But female participation increased constantly from 34% in 1992 to 44% in 2005, see also Figure 1.2.



According to Statistics Netherlands, the marked rise in the labour participation of females particularly concerns mothers who do not have a partner entering the labour market.

1.5 Trends in labour participation by age

In many European countries the so-called 'Baby Boom' generation is leaving the labour market. Governments across the EU are recognizing that older workers are becoming more important to the European economy. Their participation in the labour market helps to maintain the size of the labour force, productivity and sustainable social welfare and pension systems. They also recognize that older people need more opportunities to work later in life if they so choose, for their health, wealth and

wellbeing. The key facts are:

- In the first 15 EU member states, the employment rate for older workers, aged 50 to 65, is around 40% (2002). It is 50% for men and 30% for women. As said, these figures are much higher in the Netherlands.
- About 97% of people in the EU aged over 65 are economically inactive. There is also a significant difference between the EU and the US, where 12% of over-65s are participants in the labour market. In the Netherlands this percentage is also low at about 3%.
- In 2001, the average age at which people left the labour force in the EU was 60 years. On average, men left at the age of 60.5 and women at about the age of 59.
- The EU has already acted to combat age discrimination. The Employment Directive was agreed in 2000 by the member states. The Directive means that member states must implement legislation to tackle discrimination against older people by December 2006 at the latest. Some EU member states have already implemented this.
- The member states of the EU have also agreed on two targets to achieve by 2010:
 1. at least half the EU population aged between 55 and 64 should be in employment
 2. there should be a five-year increase in the average age at which people withdraw from the labour force.
- Meeting these two targets would mean there would be 5 million more older workers in the first 15 member states of the EU.
- The EU's taskforce on employment, led by former Dutch Prime Minister Wim Kok, submitted a report to the European Council. It called on member states to take three key measures to meet these targets:
 1. to provide incentives for workers to retire later and for employers to hire and keep older workers
 2. to promote access to training for all regardless of age and to develop lifelong learning strategies
 3. to improve the quality of work in order to provide attractive, safe and adaptable work environments throughout the working life, including the provision of part-time work and career breaks.
- The member state governments report to the EU on progress in these areas. In the UK, for example, this is done through its National Action Plan, known as the UK Employment NAP.
- In May 2006 the British government decided to raise the retirement age to 68 years. The German Chancellor Angela Merkel is also in favour of a later retirement age.

In the Netherlands early retirement schemes were introduced in the seventies as an experiment to tackle the problems of youth unemployment, by making it more attractive for older people to leave the labour market. Because early retirement gained popularity and was considered to be a social right, employment rates among older

people remained low. In a European context, the Netherlands in 1995 showed low figures for the employment of people between 55 and 64 years old, only to be surpassed by Belgium and Luxembourg.

Nowadays it is generally acknowledged that the participation of the elderly in the workforce has to be increased significantly in view of the significant ageing of the Dutch population, due to the rising life expectancy, the relative large size of post-war cohorts and lower fertility rates.

The Dutch government has been exerting pressure on the social partners to carry out a far-reaching reform of the pension system by bringing an end to current early retirement schemes and replacing them with flexible pension schemes. As mentioned before, the government will abolish the current fiscal incentives to take early retirement to stimulate the transition. However, the fast pace of this transition is subject to debate.

In a growing number of collective agreements, arrangements are made for employees who want to continue working after they reach retirement age. Other arrangements for older employees in collective agreements relate to:

- pre-retirement leave and/or extra non-working days/holidays
- extra training leave
- adjustment of tasks/work load reduction
- adaptation of working hours (no overtime, weekend work, shift work, etc.)
- shorter working hours
- career switch.

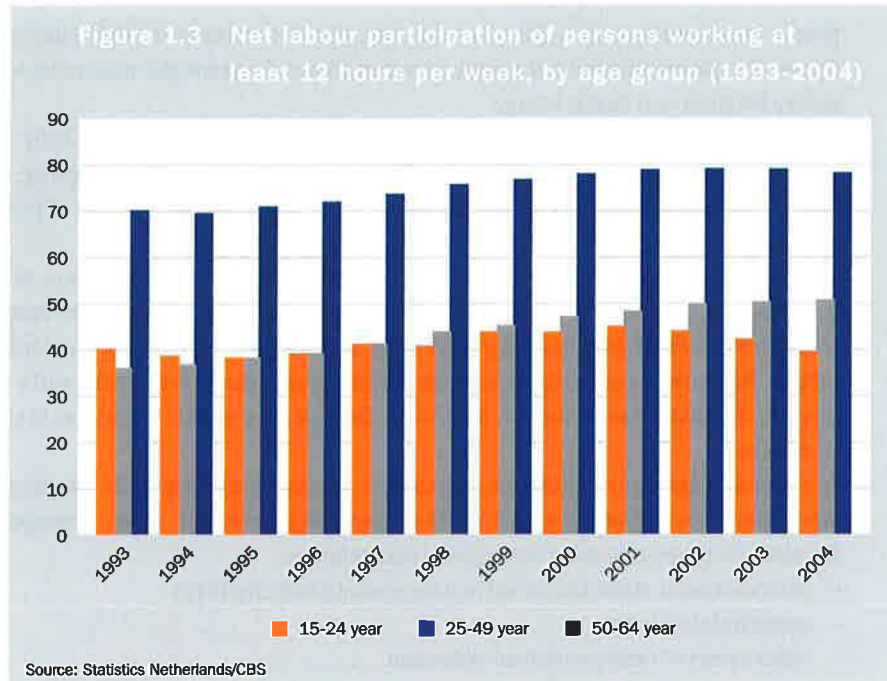
The Dutch Government believes that workers have to work beyond the age of 65. In 2005 the Minister of Social Affairs and Employment submitted a request for advice to the Social and Economic Council of the Netherlands (in which employers and unions are represented) on removing obstacles that prevent employees from continuing to work after the age of 65. This advice will be sent to the government in 2006.

Thus, the alarm bell has been sounded in the Netherlands too. Female and older persons are badly needed.

Now, what about the facts on the labour participation of younger and older people?

At the moment only 3% of all persons aged 65 and older in the Netherlands are working. According to surveys, such as the National Working Conditions Survey (Van den Bossche et al., 2006), higher educated employees, in particular, would like to prolong their career.

Pressure has been put on employers to hire female, migrant and older workers. Pressure has been put on older employees not to stop working but to continue. And it's working!



The increase in the labour participation of older persons is indeed impressive (see Figure 1.3). In the period 1993-2004 the participation of younger persons (15-24 years old) increased initially but finally remained at the same level as in 1993 (about 40 %). In the 25-49 age group, the participation rose from 70 to 79 percent. But in the 50-64 years age group the participation rose from 36 to 51 percent, which is generally considered to be spectacular, see Figure 1.3. The highest labour participation growth is among the 45-49, 50-54, and 55-59 age groups, with respectively 11%, 14% and 17% in the twelve year period 1993-2004.

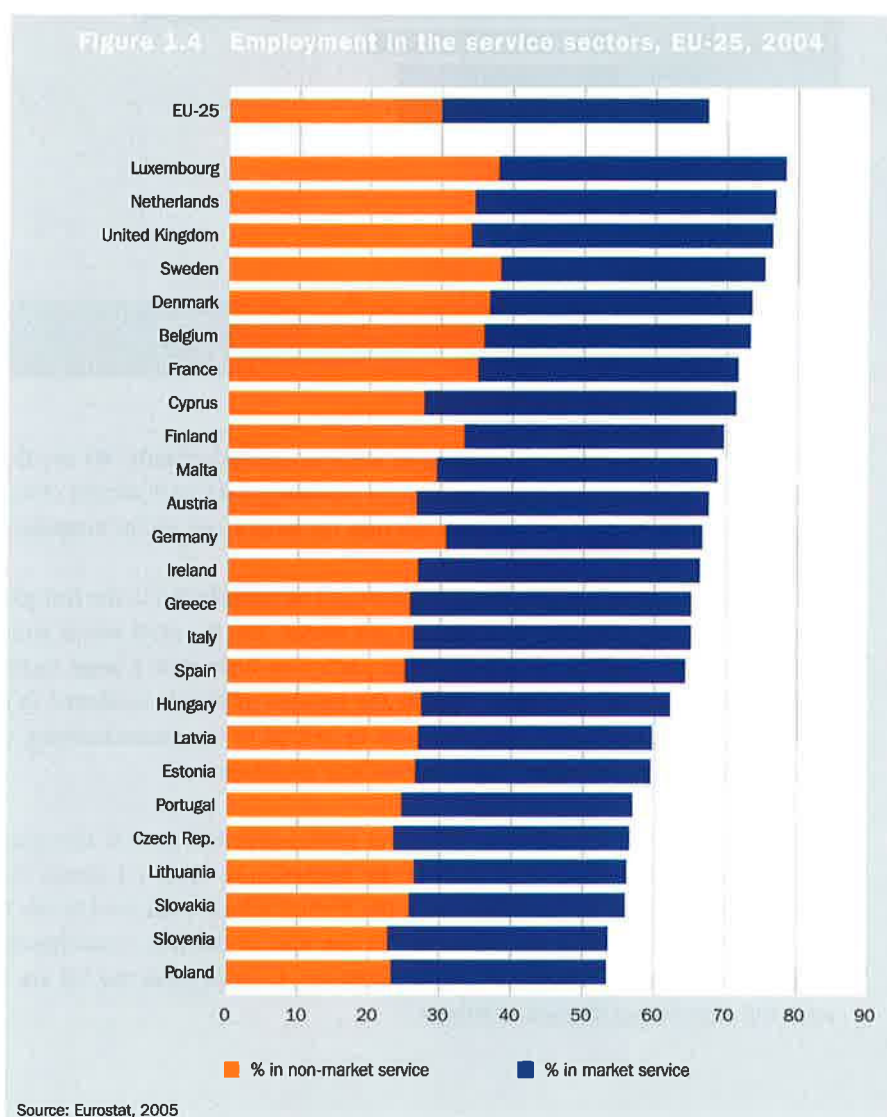
1.6 Sectoral labour market changes

In the previous paragraphs we have seen that during the last decade the labour participation among females and older persons has increased substantially. But where does this section of the population find jobs? In other words: which business sectors are growing and which are declining?

It is important to recall that before the Second World War the agricultural and the service sector in the Netherlands were almost the same size. Only the industrial sector was substantially bigger. Then, slowly at first, but after 1960 increasingly faster, the agricultural sector started to decline and the service sector started to get bigger and bigger.

Compared to the EU, the Netherlands – together with countries such as Belgium,

Luxembourg, Denmark, Sweden, and the UK – is a typically service-oriented country (Jouhette & Romans, 2005; Romans & Hardarson, 2005). In the 25 EU-countries 27.9 per cent of the employed persons aged 15 and older work in industry (in the Netherlands only 20.3 percent). In addition, in the EU-25 about 67 percent of the employed work in the service sector (in the Netherlands this percentage is about 77 percent), see Figure 1.4 for the details.



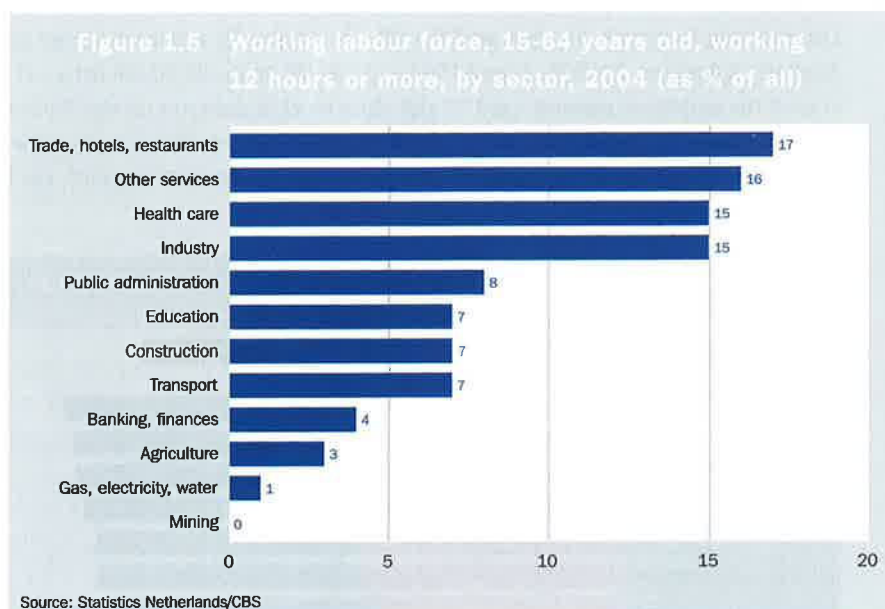


Figure 1.5 shows the 2004-working labour force in the Netherlands. We see that the largest sector is trade, hotels and restaurants (accounting for 16.9 percent of the working labour force). It may be observed too that the health care sector nowadays is as large as industry (both 15 percent).

As said, a large part of the rise in employment can be contributed to the fast-growing proportion of people employed in the service sector. The financial sector and other business services, healthcare and trade, in particular, have seen a large increase in employment. Also, but to a lesser extent, the number of people employed in public administration has increased. Employment decreased in the manufacturing sector. These changes obviously affect trends in working conditions.

The concentration of the Dutch workforce in service-oriented work is also related to the high educational level of workers in the Netherlands. Table 1.3 shows that the Netherlands is among the countries with the highest educational level in the EU-25. Almost 50 % of all workers are highly skilled non manual workers. Countries such as Belgium, Luxembourg, the Scandinavian countries, Germany and the UK are in the same top educational division in Europe.

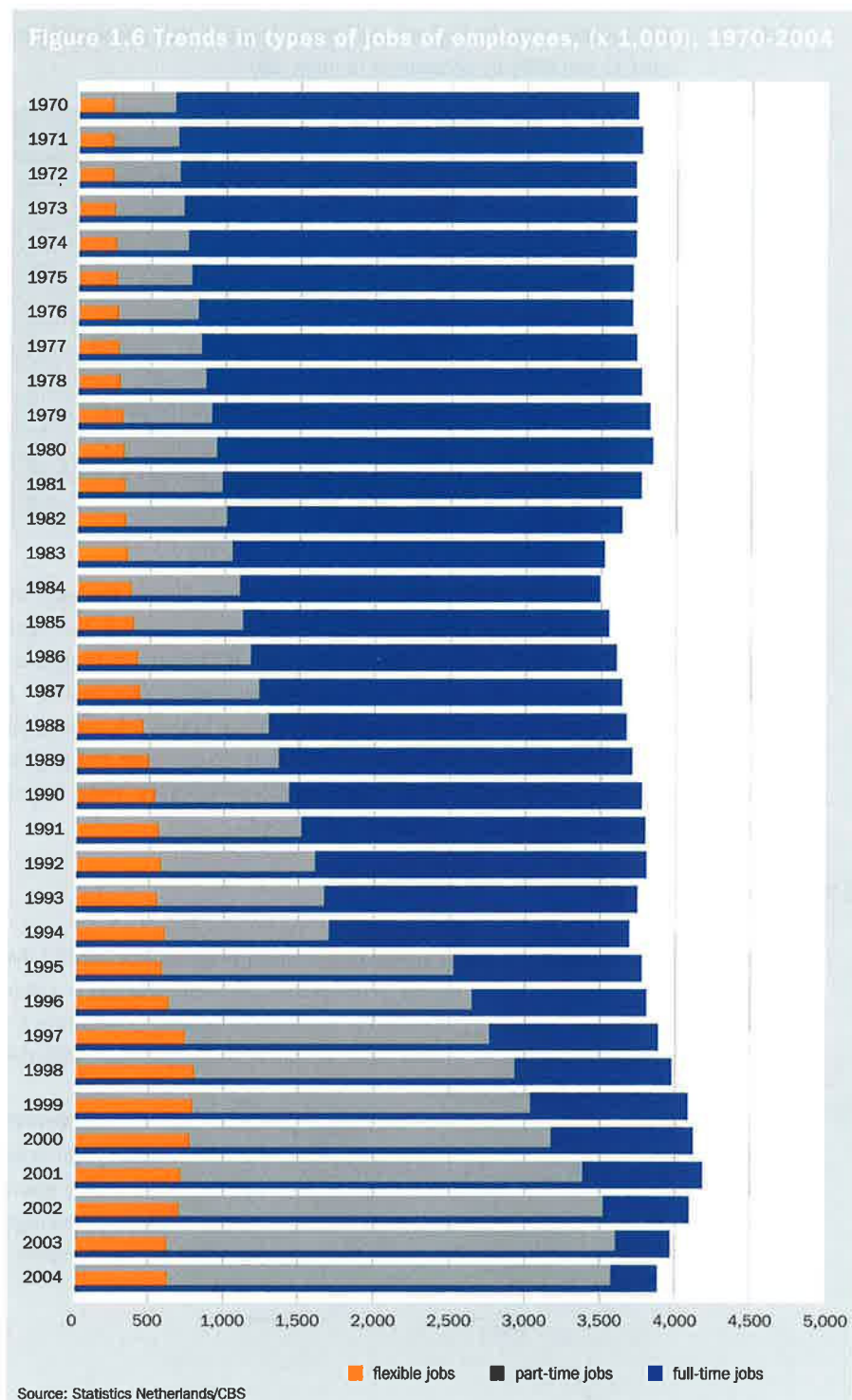


Table 1.3 EU-countries with the highest educational levels in 2004 (employed persons aged 15 and older by occupation in main job)

	Highly skilled non manual	Low skilled non manual	Skilled manual	Elementary occupations
Netherlands	49.4 %	24.8 %	16.7 %	9.1 %
Luxembourg	45.4 %	22.9 %	19.3 %	12.4 %
Sweden	44.1 %	28.2 %	22.0 %	5.6 %
Belgium	43.5 %	26.5 %	20.6 %	9.4 %
Finland	43.4 %	22.9 %	25.5 %	8.2 %
Denmark	43.2 %	25.3 %	20.5 %	11.1 %
Germany	41.8 %	24.9 %	25.2 %	8.1 %
UK	40.6 %	31.1 %	17.6 %	10.8 %
EU-25	38.4 %	24.8 %	27.1 %	9.7 %

Source: Eurostat, 2005

It should be added that the jobs created in the Netherlands during the past decades were to a large extent part-time jobs and flexible jobs, see Figure 1.6. But according to large scale Dutch surveys, job and pay satisfaction of workers in temporary and flexible jobs in the Netherlands – contrary to the opinion regularly expressed – do not statistically differ from workers in full-time jobs (Smulders, 2006). Job variety, job control and job security of flex workers is lower indeed, but job pressure and physical job strain of flex workers do not differ from those of fulltime workers. Thus, hypotheses about non-standard contracts are only partly confirmed.

1.7 Labour productivity

Though the Netherlands is world champion in part-time working, the country belongs to the top in the world as far as labour productivity per hour worked is concerned. Though Europeans and especially Dutchmen work many hundreds of hours less per year than Americans, the labour productivity per hour worked in the Netherlands is even higher than in the United States.

Recently, Massachusetts Institute of Technology-professor and French government advisor Olivier Blanchard said: the Netherlands has a productivity level which belongs to the highest in the world, an economic growth of 4 percent and a very low unemployment level. In addition, employers and unions are very much on speaking terms with respect to social and economic goals. Both powers often agree on issues in the field of pay and social security. In short, the future is bright.

1.8 Employees and the self-employed

Data from the European Labour Force Surveys show that the Netherlands, together with Denmark, Sweden, Luxembourg, Germany, Austria, France and the United Kingdom belongs to the countries with the lowest percentage of self-employed. In these, largely service-oriented, EU-countries the percentage of self-employed has remained about 8-12 percent for several decades. In the Southern European countries which are more oriented towards agriculture and industry (Spain, Portugal, Italy, Greece) the self-employed percentages are about 20 to 35 percent of all working people.

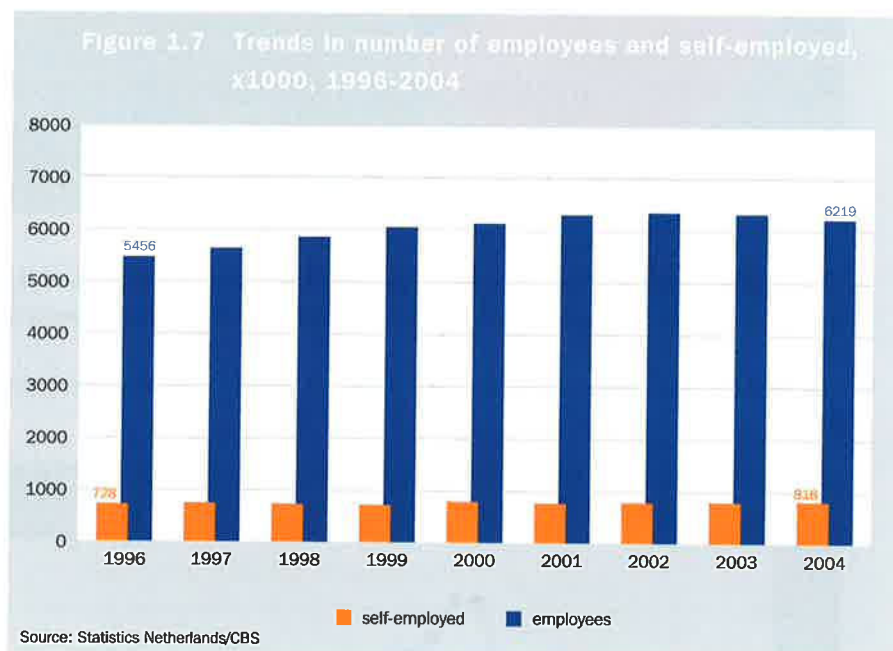
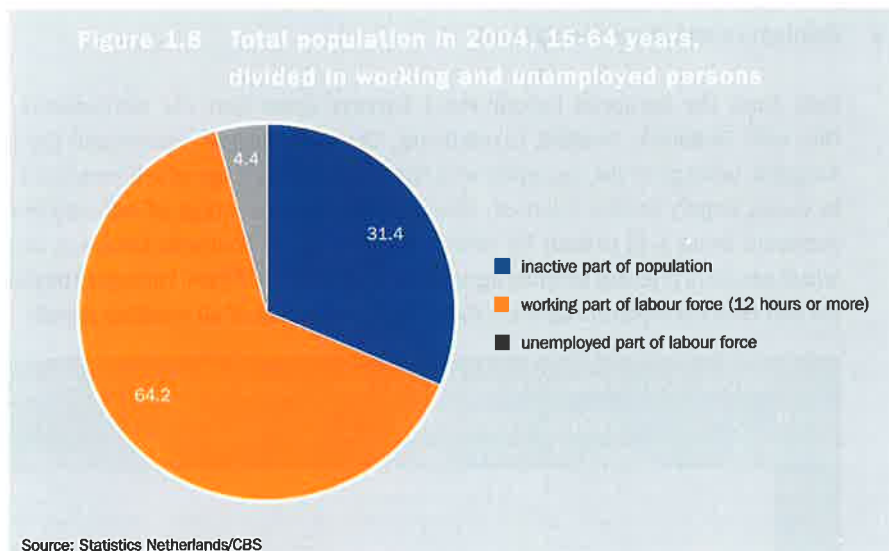


Figure 1.7 depicts the trend in the number of employees and the number of self-employed persons in the Netherlands in the period 1996-2004. In 1996 the percentage of self-employed of all employed was 11.8 percent. In 2004 the percentage of self-employed in the Netherlands was 11.6 percent.

Thus, self-employment is not the 'job-machine' it is often claimed to be.

1.9 Unemployment

When we focus on the 15-64 year age category in the Netherlands (10.9 million persons), we see that 64.2 percent of them are working 12 hours or more, 4.4 percent are unemployed (working 11 hours or less included) and the inactive population constitutes 31.4 percent (see Figure 1.8).



In 2004-2005 the Netherlands was, within Europe – together with the United Kingdom, Ireland, Denmark and Austria - among the countries with the lowest unemployment rates.

The highest unemployment rates were found in Poland, Slovakia, Germany and Greece.

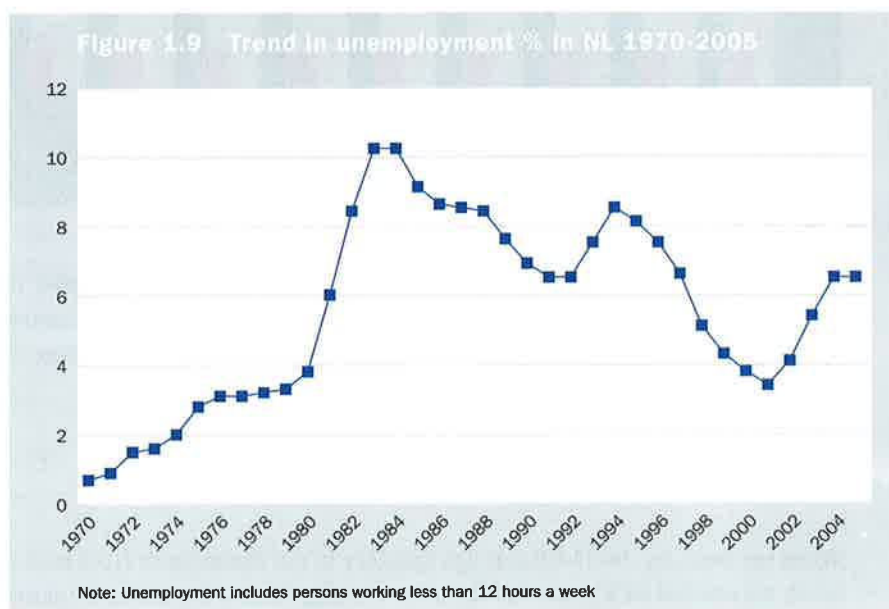


Figure 1.9 shows that unemployment in the Netherlands was highest in the eighties and the beginning of the nineties. Unemployment declined after 1994 and rose again in 2001.

In 2005 unemployment stabilized and in 2006 it began to decline once more.

1.10 Literature

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Chapter 2

Essentials of labour law and social security legislation

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Summary

Over the last decade, Dutch labour law as well as social security legislation have been revised quite dramatically. One of the objectives was to reduce absenteeism and promote reintegration. As appears from empirical research, this legal reform has been rather successful in this respect. The second goal, to stimulate *prevention* of occupational accidents and work-related diseases, has somewhat shifted to the back seat. Still, recent findings indicate that the number of occupational accidents has been declining (see chapter 9). Also, the number of employees exposed to degrading working conditions or work-related risks is apparently past its peak.

A second feature of the Dutch system is that it seeks to strengthen self-regulation: the various legal acts set out a framework of 'rules of play' as well as minimum protection standards, and invite social partners to elaborate 'tailor-made' rulings within their own sector or company. It is clear that, despite the fact that quantitatively social partners have taken up the gage, in at least one respect the system is not without flaws. The Dutch system of (enforced) self-regulation relies heavily on worker participation, notably via works councils and workers' representatives in smaller companies. Empirical findings demonstrate that this clearly overstretches the powers of the representatives. They are often lacking in resources, notably time and expertise, and it may also be surmised that industrial relations are not perfectly harmonious in all companies. In companies where the workers' representatives are surpassed by the employer, this may lead to the undermining of fundamental human rights. Also, self-regulation without the proper involvement of all parties may be at loggerheads with fundamentals such as legitimacy and legislative quality (is the latter being one of the objectives of the Deregulation policies of the Dutch government).

2.1 Introduction

Dutch regulations in the field of work, working conditions and social security may best be characterized as a web of firmly interconnected policy lines. The main purpose of this web is not, as it used to be until well into the nineteen eighties, to be merely a safety net underneath the dropouts of the labour market and a safeguard to the health of active workers. It is rather devised to function as some sort of trampoline,

reintegrating sick or disabled dropouts and preventing workers – notably women – from withdrawing from the labour market after the birth of their first child. The revision of the Working Conditions Act in 1994, for instance, was inextricably connected with the policy aim to reduce absenteeism. Also, many of the Occupational Health & Safety (OHS) covenants on occupational health and safety that were concluded after 1999 are geared as much to reducing absenteeism and promoting reintegration as to stimulating prevention. Conversely, various changes in Dutch social security policy explicitly seek to encourage employers to invest in better working conditions, thereby preventing occupational disease and accidents. Also, Dutch legislation provides several financial tools to improve the working conditions of handicapped employees (e.g. subsidies for adapted workplaces or specific equipment).

In sum, Dutch social regulation has to a large extent been put into action as a tool for active labour market policy (Popma et al., 2002). More generally, reforms in social legislation over the last decade were instigated by a desire to enhance economic competitiveness. It is quite telling, in this respect, that the thorough revision of OHS regulations at the end of the decade was conducted under the heading of a major legislative restyling called “*Marktwerving, dereguleren en wetgevingskwaliteit*” (MDW: Functioning of markets, deregulation and legislative quality; Popma, 1999).²

Still, these radical changes are more than clean cut deregulation. The Dutch policy approach can better be typified as a form of corporatist self-regulation – notably in the field of occupational health and safety and working times. Social legislation often invites the social partners to settle ‘tailor-made’ arrangements. In the field of occupational health and safety, particularly, this has led to a host of decentralized forms of re-regulation. At the sector level, the Dutch ministry of Social Affairs has instigated dozens of rather successful tripartite OHS covenants.³ Many of these have been adopted into collective agreements between employers and trade unions, which has itself also been an important tool for self-regulation. In the field of working hours, collective agreements often give free rein to employers and works councils to lay down ‘tailor-made’ working time schedules. Working hours may also be negotiated between the individual employee and his or her employer, notably in the case of the employee

² The revision of the working conditions regulations had its kick off with the influential 1995 report *Maatwerk in Bescherming* (Tailor-made Prevention), which was not instigated by the Dutch ministry of Social Affairs and Employment, but rather by the ministry of Economic Affairs. The MDW-project also involved the deregulation of working hours in the road transport sector, which tried to strike a balance between the flexible deployment of truck drivers on the one hand and better control of working and resting hours on the other. More recently, the same discussion was launched in the field of personal services (e.g. housekeeping, child care). A working committee reported to the joint ministers of Economic and Social Affairs and Employment that the ‘rigid rules concerning working times, are to be relaxed’ (Cabinet’s stance, 2003).

³ At the end of 2003, there were over 50 OHS Covenants. Together all of the covenant processes initiated apply to 3.3 million employees (46% of the working population). Initial results of the effects of the safety and health covenants were positive. In the sectors for which a safety and health covenant has been concluded, absenteeism fell by 8.4 per cent in 2002. In business sectors without a health and safety covenant, absenteeism has remained more or less the same (Ministry for Social Affairs and Employment, 2004).

wishing to combine work and care (of either children or relatives in need of medical care). These forms of negotiated self-regulation, with an undisputed institutional role for the workers' representatives, stand in a longer Dutch tradition of corporatism.⁴

Even if government has chosen the path of decentralized self-regulation, however, the negotiations do not occur within a legislative vacuum. Quite the contrary. Dutch regulations set out a playing field within which the protagonists may manoeuvre. These regulations take on the form of 'rules of play' (notably in the Working Conditions Act) as well as substantive bounds (notably in the Working Time Act). Dutch social policy may thus be described as *legally conditioned* self-regulation. Self-regulation, that is, within quite an intricate web of regulations. The threads of this regulatory web span between the opposite poles of decentralisation and flexibility on the one hand and security on the other – a delicate balance which has been labelled *flexicurity* (Wilthagen, 1998; Wilthagen & Tros, 2004). They span between the employers prerogative and a definite institutional role allotted to trade unions and works councils. And they span between working life and private life.

This chapter attempts to disentangle the various elements of this web, concurrently drawing connections between the distinguished elements. Section 2.2 depicts the structure of and philosophy behind the Dutch OHS legislation. Section 2.3 succinctly sketches some elements of social security policy, notably its intention to fight absenteeism and to reintegrate disabled employees. Section 2.4 introduces the rather complex system of working time regulations, whereas section 2.5 focuses somewhat more on the combination of work and care.

2.2 Working Conditions

The basic philosophy behind current OHS legislation in the Netherlands was already introduced in the early nineteen eighties, when the 1934 Safety at Work Act was replaced by the 1983 Working Conditions Act (WCA). The 1983 WCA shifted the emphasis in safety policy from government regulation to self-regulation. Employers had a general duty of care, supplemented with a duty to draft a specific policy on OHS and well-being as an integral part of conducting business. The most important shift from the command-and-control regime of the 1934 Safety at Work Act, however, was the manifest advance of co-determination in the realm of OHS. Even if the employer was primarily responsible, the OHS policy was to be devised, deliberated and conducted in close cooperation with the works councils, which had gained a solid legal position in the course of the nineteen seventies. Still, as health and safety were also considered to be a matter of public responsibility, the Dutch government obviously held on to the

4 Popma et al. (2002), p.178ff It may be noted, though, that the past decade has witnessed a gradual decentralisation from institutional negotiations with trade unions to individual arrangements – notably in the field of working hours.

policing role of the Labour Inspectorate as a last resort.

In its essence, the Dutch WCA anticipated most of the basic demands of the 1989 Framework Directive 89/391/EEC. However, the Dutch WCA fell short in two respects: the WCA did not yet contain an obligation to conduct risk assessments, nor did it meet the obligation to designate “one or more workers to carry out activities related to the protection and prevention of occupational risks for the undertaking and/or establishment” (section 7 FD). This latter obligation was transposed into a provision that Dutch employers were to organise ‘expert assistance in the field of prevention and protection’. In practice, this entailed that the great majority of all companies called in the help of external OHS Services. These services had to employ at least four certified professionals in the field of occupational medicine, occupational safety, industrial hygiene and organizational expertise. In 2005 the WCA was somewhat deregulated, leaving more freedom of choice in selecting OHS Services.⁵ These services no longer have to supply all four types of professionals, provided that the works council agrees to a more ‘tailor-made’ arrangement. By contrast, the 2005 modification of the WCA introduced a stricter obligation to involve internal ‘prevention workers’, i.e. employees trained in OHS matters.

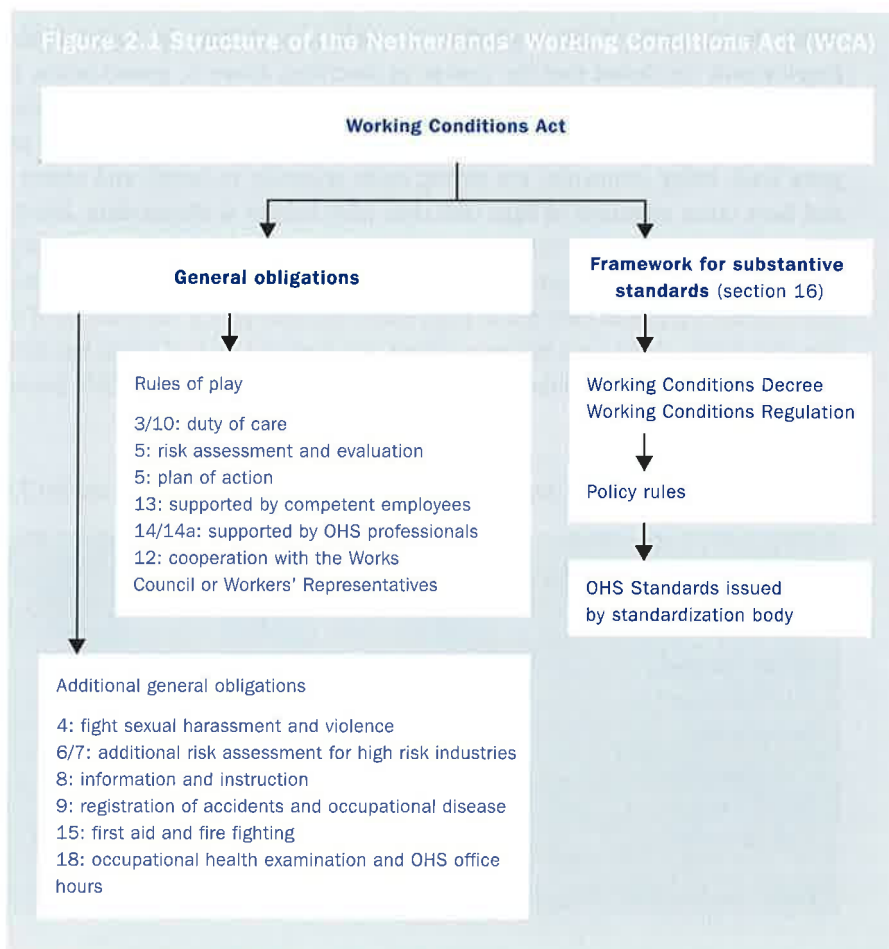
In short, then, the Dutch WCA prescribes the following structure (see Figure 2.1):

- the employer has a general duty of care with regard to the health and safety of his employees (sections 7:611 and 7:658 Civil Code and section 3 WCA) as well as the safety of third parties (section 10 WCA)
- the employer is obliged to draft an OHS policy (section 3 WCA)
- on the basis of a (written) risk assessment as well as a plan of action (section 5 WCA)
- in cooperation with the works council (50+ companies) or workers’ representatives in smaller companies (section 12 WCA)
- assisted by an internal OHS-employee and by (mostly) external certified OHS Service or by certified OHS experts, primarily a company doctor (section 13, 14 and 14aWCA)
- ultimately under the supervision of the Dutch Labour Inspectorate (section 24-29 WCA).

Next to the general ‘rules of play’, as they are called, the WCA also serves as a framework for more specific, substantive regulations. Some of these are included in the

⁵ This liberalisation is a consequence of a verdict by the European Court of Justice in a dispute between the European Commission and the Netherlands in 2003 (<http://www.curia.eu.int/en/actu/activites/act03/0315en.htm#ToC11>). The ECJ ruled that the Dutch WCA allowed for too much leeway in choosing between internal and external preventive expertise. In practice, almost all companies chose the latter. In the new regulations, that became effective as of July 2005, Dutch companies are obliged to appoint internal employees. Only if this may not be practicable, may the employer hire external experts. Companies, however, are still obliged to call in medical officers for the counsel of sick employees. This ruling is permissible, as the Framework Directive does not address the topic of absenteeism.

WCA itself (such as an obligation to draft a policy to protect employees from sexual harassment and aggression and violence (section 4)⁶, to ensure that the employees are properly informed about the work to be carried out and the related risks (section 8), and to take measures to mitigate imminent serious risks (first-aid, fire-fighting and evacuation: section 15).⁷ Most of the substantive measures, however, are laid down in secondary legislation such as the 1997 Working Conditions Decree and the 1997 Working Conditions Regulations. In this respect, section 16 of the WCA plays the role of Framework for the substantive standards.



⁶ It is likely that, due to the revision of the WCA, in 2007 this duty will be extended to an obligation to fight psycho-social risks in general.

⁷ Section 11 addresses the workers, and imposes upon them a general duty to take due care in relation to the work and to do their best to ensure their own safety and health and that of other persons. In particular, they are obliged to: use work resources and dangerous substances correctly, correctly use the personal protection equipment, co-operate with the instruction arranged for him as referred to in section 8

The main task of the Labour Inspectorate is to supervise whether Dutch companies comply with the various regulations in the field of OHS (as well as, e.g. working time regulations), investigate worker's complaints and fight wrongdoings. It has various means at its disposal, such as the authority to interrupt or halt dangerous work, book offenders and impose sanctions. In 1999, the labour inspectorate was invested with the competence to impose administrative fines. Since 2001, the labour inspectorate has imposed over 2,500 fines annually, with an average yearly revenue of € 5 million.

In 2004-2005, the WCA was subject to a thorough evaluation (Heijink & Warmerdam, 2004). On the basis of this evaluation, the Secretary of State for Social Affairs and Employment concluded that the system as described above is, *grosso modo*, performing quite adequately. Indeed, the effects of the Working Conditions Act seem to have been positive – at least as concerns the adoption of the various obligations at company level. Many companies are paying more attention to health and safety issues and have taken measures to fight OHS risks (also Heijink & Warmerdam, 2004). Even if the evaluation is largely based on a self-report survey, and therefore its figures may be somewhat flattering, reports by the Labour Inspectorate also indicate that over the years Dutch companies have put in more effort into OHS policy. The number of companies that have carried out a risk assessment and drafted a plan of action has increased (cf. Table 2.1), and the number of companies that have called in an OHS Service has risen to 98%.

Table 2.1 Percentages of companies that have met the requirements in section 5 WCA

	1998	1999	2000	2001	2002	2003
Approved risk assessment						
< 10 employees	32	35	41	57	66	72
10-100 employees	61	66	64	80	85	89
> 100 employees	89	84	81	92	94	95
Plan of action						
< 10 employees	25	28	35	46	49	59
10-100 employees	42	56	55	66	72	78
> 100 employees	72	74	73	86	85	87

Source: Labour Inspectorate (2004), Arbomonitor 2003, p. 80

Beyond these merely quantitative findings, however, there looms the qualitative dimension. According to the Dutch Labour Inspectorate, no more than three quarters of the risk assessments can be considered to give an adequate view of the situation at shop floor level (Ministry of Social Affairs & Employment, 2004). Also, the quality of the plans of action is not beyond dispute: according to the labour inspectors, 17% of the plans of action are flawed (Labour Inspectorate, 2004).

The same line of argument goes for the position of the works councils or the workers' representatives, the second pillar of the OHS system. In theory, and even in legislation, the institutional position of the workers is firmly grounded. The works council has several rights in the field of OHS, such as consultative rights, a general right to information and specific rights in the field of OHS, various facilities (such as time off and a right to training) and, most importantly, a *right of approval* concerning specific rulings in the field of OHS (Popma et al., 2002). In practice, however, many works councils do not adequately fulfil their role. Their consultative and information rights are observed in over 80% of all companies (which implies, surely, that in almost 15% of all companies even the most basic requirements of co-determination are not met). However, the far more powerful right of approval is frequently violated: two out of five works councils are passed over on a regular basis (Popma, 2003).⁸ Also, works council members are very often lacking in knowledge and no less than 92% of all works councils claim they are overburdened.

On the other hand, an analysis of the contribution of works councils to OHS policy does indicate a slightly positive effect from worker participation (Popma, 2003). On an average basis, companies that have installed a works council have carried out a risk assessment more frequently and the plan of action is slightly more often considered to be adequate after it has been discussed with the workers. OHS Services are more involved in companies with worker participation and their services are considered to have more impact. Also, absenteeism tends to be lower in companies in which the workers are more closely involved. The main explanation for this phenomenon is that in these companies the orientation of the OHS Services is less narrow than in the other companies. The findings indicate that this is partly attributable to the contribution of the works council. But even if the positive effect of co-determination seems clear, it is equally clear that in many companies the works council does not play a significant role - certainly in the vast majority of companies that have not established worker participation at all.

The third pillar buttressing the Dutch system, the OHS Services, also appears to be more solid in theory than in practice. Certainly, from a quantitative point of view, compliance is near perfection. Over 98% of all companies have called in the help of the OHS Services. Qualitatively, however, the OHS Services have suffered a great deal of criticism.

Firstly, OHS Services have specialised in individual medical counselling rather than in playing an effectual role in the field of prevention. This criticism is backed by statistics that indicate that nearly 100% of the companies have hired OHS Services for individual medical counselling, whereas specific advice on how to conduct a preventive OHS policy or investigation of working conditions on the shop floor is quite rare (Labour

⁸ This number is corroborated by a more recent study in companies with more than 200 employees, which found that even in these bigger firms the works council is involved in no more than 51% (Van der Kemp & Engelen, 2004).

Inspectorate, 2004). This also explains why the preventive professionals (safety advisers, occupational hygienists and organizational specialists) are clearly outnumbered by medical officers.⁹

Secondly, employers too are not very enthusiastic about the performance of the OHS Services. On a 1-10 scale, employers have for many years awarded no more than a meagre '6' (which, in the Netherlands, is a narrow pass mark), with a slight upgrade in 2004.¹⁰ Main criticism: lack of knowledge at the shop floor level, no added value for business processes and a lack of initiative. Only half of the companies would have hired an OHS Services had it not been obligatory (Heliview, 2003). Still, even after the 2005 deregulation concerning the OHS Services, the vast majority of all companies appear to remain with their current OHS Service (Dekker & Van Rij, 2006).

In sum, it may be concluded that the Dutch system of OHS policy at the company level is far from perfect. In theory, the system is well developed. In practice, though, it is flawed in many respects: not all employers abide by their obligations, works councils are operating effectively in only a small minority of all companies and OHS services are mainly geared to individual counselling rather than to preventive services. The Dutch system of enforced self-regulation appears to be efficacious only in larger companies, with only a limited effect on SME's. This is one of the reasons the Dutch government has invested considerably in tools to make OHS instruments more accessible to SME, mainly by providing more information and sector specific risk assessment tools.¹¹ Also, in response to the evaluation of the WCA, the Secretary of State for Social Affairs has pronounced that he will further relax working conditions regulations in order to incite more self-regulation. The adapted WCA as well as a new Working Conditions Decree will come into force in 2007.

2.3 Social Security Policy as a means to fight absenteeism

Even if it was not an element of OHS *in sensu strictu*, the most influential change introduced with the 1994 WCA reform was the provision that the employer was to conduct a policy relating to employee absenteeism. This notably implied a statutory obligation to counsel employees unable to work due to sickness (section 4 WCA). Unlike the changes to the WCA mentioned earlier (risk assessment, OHS Services), this new provision was not instigated by the Framework Directive, but was part of a broader wave of legislative ardour aimed at pushing back absenteeism and disability.

9 The most recent figures indicate that OHS Services employed 2,000 occupational doctors and over 400 OHS nurses, compared to 750 specialists from the other three core disciplines combined.

10 Works Councils are even more negative towards OHS Services, one of the main moot points being their lack of independence (Popma, et al., 2001).

11 <http://www.rie.nl/> and <http://www.arbo.nl/?sectorsel=ja>

This provision in the WCA may in itself not have been too influential, but it was intertwined with the introduction of employer liability to sick pay. Whereas before 1994 sick employees were paid from social security schemes, now the employer had to pay absent employees at their own expense - initially for a period of six weeks, but in 1996 this period was extended to one full year, and as of January 2004 to two years. The goal of these drastic measures was to further stimulate employers to pay more attention and energy to prevention, and to stimulate the employer and the sick employee to resume work as soon as possible after a period of sickness leave.

Even if the explicit goal of this own-risk system was to boost prevention, many employers resorted to short term policies to fight absenteeism (such as strict control on absenteeism, highly selective recruitment policies and financial incentives as a threshold to 'loose morals' on the part of sick employees). Another side effect of the focus on absenteeism is that it has tended to guide attention away from prevention in the OHS Services. As a result of the legal obligation to provide counselling to employees, occupational medicine has become the core activity of the OHS Services. Partly because the OHS Services were operating in a free market, competition seduced them to go along with policies that were meant to tighten the reins: strict surveillance and individual medical counselling rather than investment in preventive activities. Trade unions and works councils have criticized the OHS Services for having degraded themselves to become 'absentee hunters'.

One of the main reasons to tighten the regime of sick leave pay, was that work-related sickness was deemed to contribute to the persistent problem of work incapacitation – which was considered one of the most difficult problems in the Dutch social security system. For many years it had been relatively easy to receive disability benefits, and despite many efforts by several governments the amount of people with a disability benefit remained vast (it reached nearly one million employees). A committee of experts (the so-called Donner commission) drew the conclusion: in the Netherlands we have created a system which has led to the disability benefit system becoming too easily accessible.

In close cooperation with all organisations involved, a new successful law was created called the Gatekeeper Improvement Act (Wet Verbetering Poortwachter, WVP). This act described the responsibilities of all parties involved during a period of sickness leave: the employer, the employee and the occupational physician. Strong penalties are imposed upon employers and employees who violate the regulations in the WVP, such as an obligation to draft an action plan and keep a reintegration log. For employers the penalty can include the payment of the disability benefit during the third year of sickness. For the employee the penalty can be a reduction in the disability benefit. The 'gatekeeper', the Dutch organisation for public employee insurance (UWV), has the task of judging whether the employer and employee have done their utmost to reintegrate the employee.

More recently, on the first of January 2006, a new disability law came into force. It replaced the old disability law of 1967 (WAO). The name of this new law is: Work and Income according to Working Capacity Act (WIA). The primary aim of this law is, once again, to boost reintegration efforts – not only in the two-year period of sickness leave, but also after that period. This WIA is devised in such a way that for a partially disabled employee it is more attractive financially to try to obtain work rather than to receive a disability benefit.

The criteria for having the right to receive a disability benefit have been tightened. Under the WAO regime, persons with a disability percentage of over 15% would receive a (partial) disability benefit. As a result of the WIA, this percentage has risen to 35 %. Also, employees that suffer a disability rate of between 35-80% may lose a substantial part of their benefit if they do not obtain a (partial) job that may generate income. But those persons with a sustained long-term loss of work-related capacity (fully disabled people) receive a disability benefit of 70% of their last income.

The system of financial back up has changed too. In this field, the employer can choose between joining the Dutch organisation for public employee insurance (UWV) or paying the disability benefits for his own employees by himself (own risk). If he chooses the UWV to execute the task of collecting the premium and paying the disability benefit for his own (partially) disabled employees, then the employer remains within the boundaries of the collective disability system. If the employer chooses the latter system, the payment of the disability benefits for his own (partially) disabled employees is privatised completely. Of course, it is possible for the employer to insure himself against the financial risks of the privatised payment of disability benefits. In both situations the UWV, in this case the public insurance company's doctor, has to assess the disability of the employee. So the disability examination remains in public hands.

In a period of 12 years the social security system regarding sickness leave and disability has changed dramatically – from a system based on public solidarity, executed by semi-governmental organisations, to a system based on the duties and responsibilities of employers and employees at company level. Many small and medium-sized enterprises have private insurance to mitigate the financial risks of sickness leave and disability. As a result of this system change the influence of a few big insurance companies on the topics related to prevention, sickness leave, disability and reintegration has risen.

2.4 Working Time

As in the case of the Working Conditions Act and the related OHS regulations, the structure of current working time legislation dates back to the mid nineteen nineties. The 1996 Working Time Act (WTA), that superseded the 1919 Labour Law, was suffused with roughly the same philosophy as the Working Conditions Act. The WTA was instigated by both the government resolution to withdraw from its rather centralist

role in working time policy as well as the desire to leave more room for tailor-made working time arrangements at company level. This latter desire was prompted by the fact that in the early nineties some 50% of the work force no longer fitted into the nine-to-five scheme. Deviation of the dominant working hours until then required a special permit issued by the Labour Inspectorate. The new WTA was meant to replace this system of permits by a system of collective deliberation, giving employers and employees more say over appropriate (and more flexible) working hours.

The so-called tailor-made arrangements are considered to be drafted by the social partners - by means of a collective labour agreement between employers and trade unions or by written agreement between the works council or the workers' representatives.¹² However, this self-regulation is not totally at the full discretion of the social partners. Negotiations may take place within a playing field that is demarcated by a wealth of pickets. These take on the form of a host of norms concerning two 'clusters': one pertaining to working time (maximum working hours, night shifts, work on Sundays) and the other to resting time (minimum resting time, work breaks).

The outer limit is called the 'consultative regulation'. Within the norms of the consultative regulation, the social partners may try to reach an agreement. The essence of the consultative regulation is that it allows for more overtime work, that it gives more flexibility to unevenly spread working hours over longer periods (which may prove useful to absorb periodical peaks in work load) and that it gives more room to schedule work on Sundays or in night shifts. The principal arena of consultation is the *sector* level, as part of the negotiations between employers' organizations and the trade unions on collective labour agreements. Negotiations at *company* level are only allowed after the applicable collective labour agreement has given them the possibility to do so. If the labour agreement has not 'opened' one of the two clusters, decentralized negotiations are precluded.

If the social partners do not reach an agreement, the so-called 'standard regulation' comes into force. This standard regulation is somewhat tighter in the areas mentioned (see Table 2.2).¹³

12 In fact, the figure of the workers' representatives was introduced into the Dutch labour relations system precisely by the Working Time Act. Later on, it was inserted into OHS legislation and, more importantly, the Works Councils Act in 1998.

13 The WTA also contains some further restraints regarding the working hours of pregnant employees, working mothers and young employees (16-17 years old), as well as a prohibition on child labour. For a comparison with other EU Countries, cf. Boonstra, et al., 2004.

Table 2.2 Regulations concerning working hours in the Netherlands

	Standard regulation	Consultative regulation
Minimum resting time		
On a weekly basis	Either 36 hours per 7x24 or 60 hours per 9x24 (allowing for a reduction to 32 hours once every five weeks)	
On a daily basis	11 hours every 24 hours (allowing for a reduction to 8 hours once in a 7x24 period)	
Work on Sundays	Forbidden, unless – agreed upon and emanating from the nature of the job – company circumstances make it necessary and the works council of the workers' representatives have consented At least 4 Sundays off every 13 weeks	Forbidden, unless – agreed upon and emanating from the nature of the job – company circumstances make it necessary and the works council of the workers' representatives have consented At least 13 Sundays off every 52 weeks
Maximum working hours (structurally)		
Per shift	9 hours	10 hours
Per week	45 hours	-
Per 4 weeks	-	Average 50 hours per week (200)
Per 13 weeks	Average 40 hours per week (520)	Average 45 hours per week (585)
Maximum working hours during overtime		
Per shift	11 hours	12 hours
Per week	54 hours	60 hours
Per 13 weeks	Average 45 hours per week (585)	Average 48 hours per week (624)
Work break		
Per shift > 5½ hours	½ hour	½ hour (allowing for 2 times ¼ hour)
Per shift > 8 hours	¾ of an hour (of which ½ hour uninterrupted)	½ hour (allowing for 2 times ¼ hour)
Per shift > 10 hours	1 hour (of which ½ hour uninterrupted)	½ hour (allowing for 2 times ¼ hour)
Night shifts (between 00.00-06.00)		
Maximum number of night shifts	10 per 4 weeks and 25 per 13 weeks (16 per 4 weeks if the shift ends at or before 02.00)	28 per 13 weeks (52 per 13 weeks if the shift ends at or before 02.00)
Maximum number of night shifts in a row	5 (6 if the shift ends at or before 02.00)	7
Minimum resting time after a night shift that ends after 02.00	14 hours	14 hours (allowing for a reduction to 8 hours once in a 7x24 period)
Minimum resting time after a series of night shifts	48 hours	48 hours
Maximum working time per night shift	8 hours	9 hours
Maximum working time per night shift (overtime)	9 hours	10 hours
Maximum working time per 13 weeks	-	Average 40 hours per week (520)
Maximum working time per 13 weeks (overtime)	Average 40 hours per week (520)	Average 40 hours per week (520)

The respective norms in the standard regulation are to be vindicated by means of civil law. If the employer does not uphold the norms, trade unions or individual employees may file a complaint or bring civil action against the perpetrating employer. The outer norms, i.e. the consultative regulation, are enforced by the Labour Inspectorate. Until recently, the Inspectorate could order compliance and summon activities on the shop floor to be ceased (and issue a booking report, leading to a possible fine).¹⁴ If these coercive measures are not observed, this is considered a criminal offence.¹⁵ As of October 2004, the inspector may also fine the perpetrator 'tit for tat'.

Even if the 1996 changes to working time legislation have raised attention at the negotiation table, in practice the WTA has not lead to really fundamental changes. One reason is that if employers put flexible working hours on the agenda, the trade unions usually resisted the pressure for flexibility (Mevissen et al., 2001). An evaluation of the WTA in 2001 found that of all collective agreements, no more than 15% contained specific norms that went beyond the norms of the standard regulation concerning working hours. Furthermore, 72% of the specific agreements established working times well within the standard norms for working hours (Labour Inspectorate, 2004). In the cluster on resting time, even fewer agreements were concluded. In one third of the collective agreements, the cluster was not opened at all. Only in 9% did the agreement exceed the standard norms.

At company level, half of the companies have negotiated working times with the works council or the workers' representatives. It is interesting to note that rejection of a working time proposal by the works council/ workers' representatives is seldom (Labour Inspectorate, 2004). In general, the workers' representatives may be considered rather docile and showing little initiative. Also, the evaluation pointed out several shortcomings in their countervailing power. Works councils are lacking in knowledge, they are primarily focused on the company's interest and often enough the employer one-sidedly introduces working time regimes without consulting the workers. These latter findings parallel the research on the effectiveness of works councils in the field of OHS (Popma, 2003). This might be a reason to place a few question marks beside the concept of self-regulation. However, neither the evaluation of the WTA nor the evaluation of the Working Conditions Act in 2004 has led to any action from the Secretary of State for Social Affairs and Employment to strengthen the position of the works council.

The WTA itself, however, is to be relaxed in the near future. The main point is that the distinction between the standard and consultation regulation is to be removed, and

14 In 2001, the average fine was some € 1,400 per offence.

15 In an annual average of 25,000 inspection visits, the inspector found some 1,100 companies that had violated the law. On average, the inspectors ceased activities in over 400 companies. Labour Inspectorate (2004).

also that 'normal' working hours and 'overtime' will be combined into one norm. The admissible working time will thereby be raised to 12 hours daily, 60 hours per week and 48 hours over 13 weeks – de facto, the current standard regulation is abolished. The same will go for night work. Also, the threshold for breaks will be higher (6 hour shift as opposed to the current 5^{1/2}). The changes will bring Dutch regulations more in line with European Directive 93/104/EC.

2.5 Work and Care

The Working Time Act not only seeks to regulate working hours, it also intends to safeguard work and health of employees (by reason of which 'working time' is to be included in the risk assessment in section 5 WCA). The change in working time regulations was also intended to strike a balance between work and other responsibilities outside paid work. The employer, so states section 4.1 WTA, must take account of the personal circumstances of the employee. This explicit objective was formulated in response to societal phenomena such as the growing number of two-earner households (entailing problems in the combination of work and care) and the rising problem of overburdened workers. The work/care load has led to an increased number of workers reporting stress as well as an increase in stress-related absenteeism (cf. chapters 3 and 9).¹⁶

The general obligation of employers to take personal circumstances into consideration, which came into effect with the WTA in 1996, was later to be complemented with two specific legislative acts: the Work and Care Act (2001) and the Working Hours Modification Act (2000). The Work and Care Act is a framework act, of which the WHMA is a specific elaboration. It also serves as a framework for additional regulations on specific topics – such as short term care leave¹⁷, calamity leave, maternal leave, adoption leave and career breaks (training, sabbatical). Most of the regulations contain stipulations concerning the time off permitted as well as continued payment (see Table 2.3). In 2006, a new Course of Life Act will come into effect, which is meant to set a framework for various leave arrangements. This Course of Life Act will give employees possibilities to save money and/or time to finance parental leave, other forms of unpaid leave (education, voluntary work) or early retirement.

The Working Hours Modification Act (2000) is a legal provision for the modification of working hours of a more enduring nature. It gives employees who have worked for more than one year at a company, the right to request shorter or longer working hours. The employer must, in principle, consent to this request. He can only turn it

¹⁶ In 2003, the WTA was also changed to deal with the problem that some employees do not, for religious reasons, wish to work on Sundays. The WTA allots equal rights to employees with a different religious persuasion. The employee cannot be forced to work on the respective religious day and is also protected from dismissal (section 7: 670 Civil Code).

¹⁷ Long term care leave is currently being approved by the Second Chamber of Parliament.

down if the request is “at odds with important company interests”. Important company interests are, among others, problems with filling in the vacant hours. A request for *longer* working hours may be turned down in the obvious case that there is simply not enough work to be done. The WHMA only applies to companies with more than 10 employees.

In the four years after the WHMA came into effect, 26% of all employees desired to reduce their working hours. Only 53% of these have actually submitted a request to their employer (the main reason for employees not expressing their desire, is that they could not bear the financial consequences). In 54% of the cases, the employer consented entirely (and in another 10% partly). In 23%, the request was turned down (Mu Consult, 2003). The number of employees that would like to work more hours is 15%. More than three out of four have also let their desire be known to the employer. In 39% of the cases, the request was met (and in another 23% it was met partly). In 25% of the cases, it was turned down (mainly because there was simply not enough work, Mu Consult, 2003).

Table 2.3 Regulations concerning leave from work

	Period	Salary	To be paid for by	Employer may refuse leave
Short term care leave	10 days per 12 months	70%	employer	yes
Long term care leave	6 times the weekly working hours per 12 months			
Calamity leave	Depending on the situation, but short term	100%	employer	no
Pregnancy and maternal leave	16 weeks	100%	state benefit	no
Birth leave for partners	2 days	100%	employer	
Parental leave	13 weeks within 6 months (part-time)	-		no
Adoption leave	4 weeks	(100% of salary)	state benefit	no
Terminal care	1-6 months, 1/3 of weekly working hours	- (sometimes in collective labour agreement)		yes
Career breaks	Not a statutory regulation. Mostly part of collective labour agreement, to be earned by the employee himself (savings system). Current systems are to be replaced in 2006 by a statutory system.			

The Work and Care Act once again allots an important role to various levels of bipartite negotiations – both in collective labour agreements, between employer and works council, and between employer and individual employees. The collective agreements have predominance over the individual ones and, like working time agreements, set a playing field for individual arrangements. The number of collective agreements in which changes in working hours have been dealt with substantially, is limited. However, one out of five collective agreements does contain a further elaboration of the concept of ‘important company interests’ (Schaeps et al., 2003). Works councils do not seem to take a very prominent role in this matter. If conflicts arise, this is deemed to be a matter for the individual employee. Also, research shows that in more than half of the companies specific arrangements have not been discussed with the works councils, whereas on the basis of the Works Councils Act these arrangements fall within the right of approval of the works council (Mu Consult, 2003).

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Chapter 3

Trends and risk groups in working conditions

Seth van den Bossche, Peter Smulders & Irene Houtman

Summary

The aim of this chapter is to provide an overview of the developments of working conditions in the Netherlands throughout the last decade. The main conclusions that can be drawn from nationwide surveys data are the following.

After increasing for about 20 years, *job demands* stabilised at the end of the 1990s. Recent figures even showed a downward trend. In 2005 work pressure was highest in education and in banking & finances, and lowest in agriculture

Workers increasingly report more *job control*, which may probably be explained by labour market changes, i.e. more service and less industrial work. The lowest levels of job control are found among the 15-24 years old, workers in agriculture, transport & communication and hotels & restaurants. Workers in the public administration have the highest level of job control.

Trends on *emotional demands* are not yet available. This work characteristic is highest in health care, education and the public administration, and will have everything to do with the intensive contacts with clients in those sectors.

The tendency of increased *workplace violence* that was observed from 2000 until 2003, seems to stabilise in 2004. Sectors such as health care, hotels and restaurants, and education, where work involves frequent customer contact, are more vulnerable to intimidation by customers than other sectors.

Exposure to *physical risks* at work does not appear to decrease, despite the fact that employers have been taking more measures. Dangerous work is highest in the construction sector, followed by agriculture, industry, transport & communication. The differences between males and females with respect to dangerous work is striking. Highest levels of noise are found in construction, industry and agriculture. Work that involves repetitive movements of arms and hands has become more common over the last years, probably because of the continuing introduction of VDU- or computer work.

The number of contractual *working hours* has decreased slightly from about 33 hours per week in 2000 to 32 hours in 2004. Working on Saturday morning increased from 12 % in 2000 to 21 % in 2004. Working on Saturday afternoon increased from 10 % in 2000 to 17 % in 2004. Nowadays about 9-10 % of the employees work on Sunday morning and on Sunday afternoon.

3.1 Introduction

As the nature of work changes, so do requirements for employees. The ongoing transformation from a product-oriented economy towards a service-oriented economy results in more social interaction with patients, passengers, pupils, etc. which can lead to workplace violence and stress. Technological changes lead to higher information-processing requirements for employees and they affect the boundaries between working life and private life. At the same time, employers are faced with the challenge of addressing changes in the composition of our workforce, such as the rising age, an increasing participation rate of women and higher levels of cultural diversity, that have implications for the organization of work. Both the changing nature of our work and the changes in the workforce affect the quality of working life.

This chapter describes the main changes in the working conditions of Dutch employees throughout the past decade, based on statistical information.

The central questions to be answered are:

1. What changes have taken place in the working conditions of the Dutch workforce over the past decade (1994-2004)?
2. What are the business sectors and professions at risk?
3. What improvements have taken place and what problems remain to be resolved?
4. To what extent can 'emerging occupational risks' be identified; what new problems have arisen?

3.2 Information sources

Since 1977 work and health statistics, covering the entire working population in the Netherlands, have been collected periodically by Statistics Netherlands (in Dutch: CBS, Central Bureau of Statistics). In the beginning these surveys were held every third year and from 1989 onwards they were held on a yearly basis. It was not until 2003 that it was possible to cover a continuous period of ten years because of a trend break in 1994 (change in questions and answer categories). In addition, in 2003 several previously asked questions on working conditions were omitted from the POLS (Permanent Quality of Life Survey) and in 2004 nearly all questions on working conditions were omitted from this survey. Thus this chapter focuses on the 1994-2003 period.

Since 2000 and 2003, respectively, two additional biennial surveys on the quality of work and working conditions of Dutch workers have been carried out: the TNO Work Situation Survey (in Dutch: TAS; Smulders et al., 2001) and the Netherlands Working Conditions Survey (in Dutch: NEA; Van den Bossche & Smulders, 2004; Van den Bossche et al., 2006). Both TAS and NEA focus on a wide range of aspects of the working environment and are, together with the POLS, the main sources of information for the current chapter.

Table 3.1 shows the main features of the three surveys we are using for this chapter. Among others the sample sizes, the response rates, the periodicity, the methods, etc. are described.

Table 3.1 Surveys on working conditions in the Netherlands

	Permanent Quality of Life Survey	TNO Work Situation Survey	Netherlands Working Conditions Survey
Acronym (Dutch)	POLS	TAS	NEA
Coordination	Statistics Netherlands (CBS)	TNO Work & Employment	TNO Work & Employment
Since	1977	2000	2003
Sample	Representative sample of the Dutch population	Representative sample of the Dutch Labour Force (15-64)	Representative sample of the Dutch Labour Force (15-64), excluding self-employed
Net sample size	10.000 (Module Health & Working Conditions; approx. 4.000 workers)	4,000	10,000 (2003) 25,000 (2005)
Response rate	60%	45%-50%	40%-45%
Frequency	Every third year for 1977-1989; annually since 1989 (trend break in 1994); continuous (whole year through) since 1997	Biennial (autumn)	Annually from 2005 (autumn)
Method	CAPi (face to face interviews) PAPI (postal questionnaire)	PAPI (postal questionnaire) CAWI (web interviewing)	PAPI (postal questionnaire) CAWI (web interviewing)

The NEA currently is the largest survey on working conditions available in The Netherlands. The survey serves as a national benchmark for sector-level monitoring studies on working conditions. In a sense the NEA partly replaces the POLS survey by Statistics Netherlands. About 25 items in the NEA are directly derived from the POLS.

3.3 Psychosocial risk factors

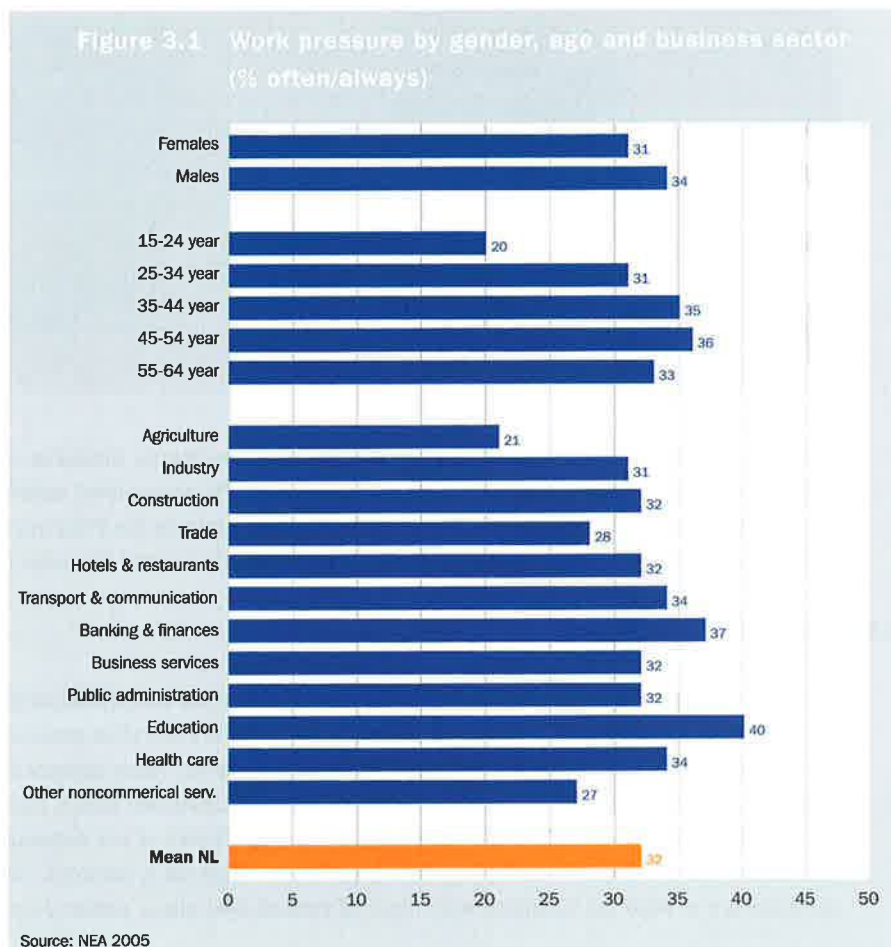
In the Permanent Quality of Life Survey (POLS) several aspects of the psychosocial working conditions are covered, namely job demands (pace of work and time pressure), job control (autonomy), professional development and job rewards. These aspects are key elements in one of the leading models in literature on occupational stress, Karasek's Job Demands-Control model, which emphasizes the importance of job demands and job control for work stress and other health problems (Karasek & Theorell, 1990). A combination of high job demands and a lack of control over these demands is likely

to evoke stress reactions among workers and is also associated with increased health risks, such as mental health problems (Stansfeld et al., 1999), musculoskeletal problems (e.g. Ariëns et al., 2001), risk of cardiovascular morbidity and mortality (Belkic et al., 2004), and absenteeism (Smulders & Nijhuis, 1999).

Table 3.2 shows that the percentage of people working at a high pace has been more or less stable in the Netherlands since 1997. When we look at a larger time frame, fast-paced work seems to reach its peak in 1997, after increasing for about 20 years (Andries et al., 2001). Since 1997 the pace of work has been levelling off.

Working under high time pressure, which has been measured since 1996, follows a slightly different pattern. The percentage of workers that frequently have to work under high time pressure increased over the period 1996-1999, then decreased in 1999-2001 and has remained stable since then.

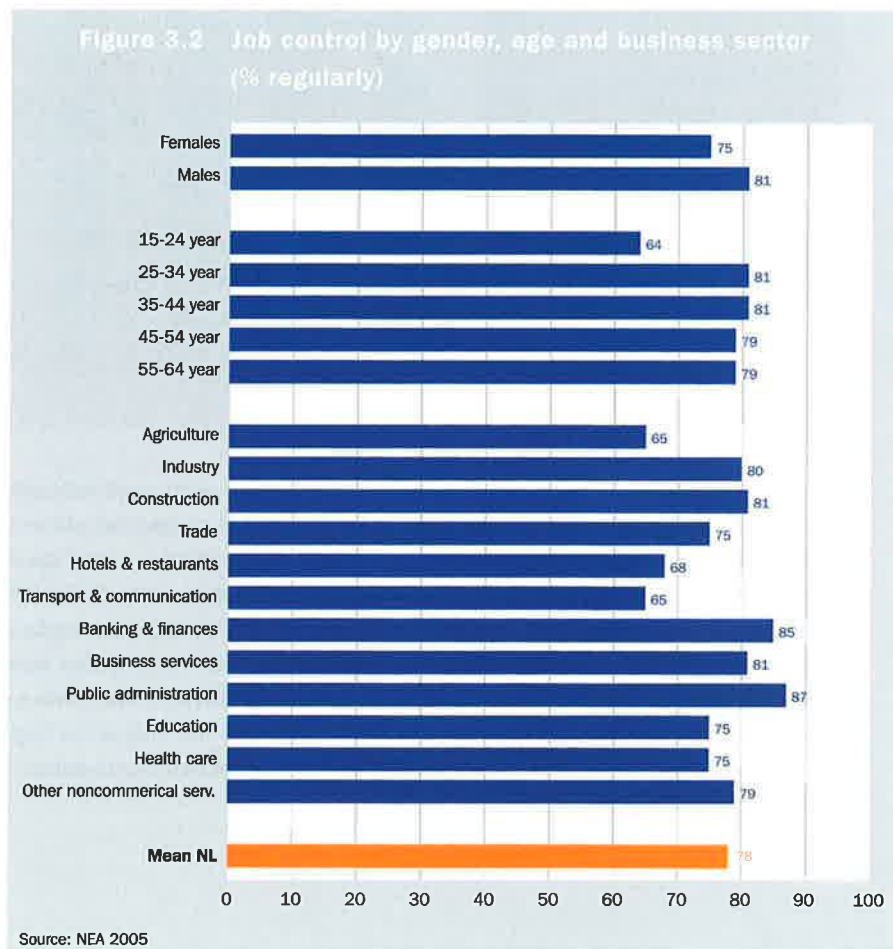
In the 2005 Netherlands Working Conditions Survey almost 25.000 Dutch employees



were interviewed about their working conditions. One set of questions focussed on their work pressure. Figure 3.1 shows that work pressure is highest in education and in banking & finances (40 % and 37 % of the employees in those sectors say they are working often or always under work pressure). Work pressure is lowest in agriculture (see Figure 3.1).

In addition, it may be concluded from Figure 3.1 that males work a little more under work pressure than females and that the younger workers experience relatively little work pressure. Work pressure is highest among the 35-54 year old employees.

Figure 3.2 presents information on risk groups with respect to job control. The lowest levels of job control are to be found among the youngest workers (15-24 years old), workers in agriculture, transport & communication and hotels & restaurants. The employees in the public administration have the highest level of job control.



One of the most striking developments in the quality of working conditions over the past decade is the increase in job control of the Dutch workforce. The percentage of workers indicating that they are free to choose the way they do their work has been steadily increasing since 1994, on average by one percent per year (see Table 3.2).

Table 3.2 Trends in psychosocial risk factors (percentage of workers with the answer 'yes, frequently/mostly')

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Job demands											
High work pace	38	42	41	43	42	42	40	41	41	41	41
High time pressure	-	-	32	35	36	38	35	32	31	32	32
Job control											
Free to choose work method	65	66	68	69	70	71	72	73	73	-	-
Free to interrupt work	54	53	52	54	54	54	54	60	61	-	-
Control over work pace	-	-	59	59	59	65	66	64	65	-	-
Control over work order	-	-	71	72	72	68	69	74	75	-	-
Able to find solutions to problems yourself	-	-	78	77	77	78	77	79	80	-	-
Development / promotion / pay											
Poor match work-education	25	26	25	28	25	27	27	27	25	-	-
Monotonous work	7	6	7	7	7	7	7	7	7	-	-
Lack of personal development	23	22	24	26	24	26	25	24	22	-	-
Good promotion opportunities	33	31	31	33	34	34	34	38	39	37	36
Insufficient payment	27	28	31	32	33	33	36	31	29	31	33
Pleasure in work	93	92	91	92	92	92	92	92	92	93	92

Source: Statistics Netherlands/CBS ; workers aged 18-65, working 12 hours/week or more

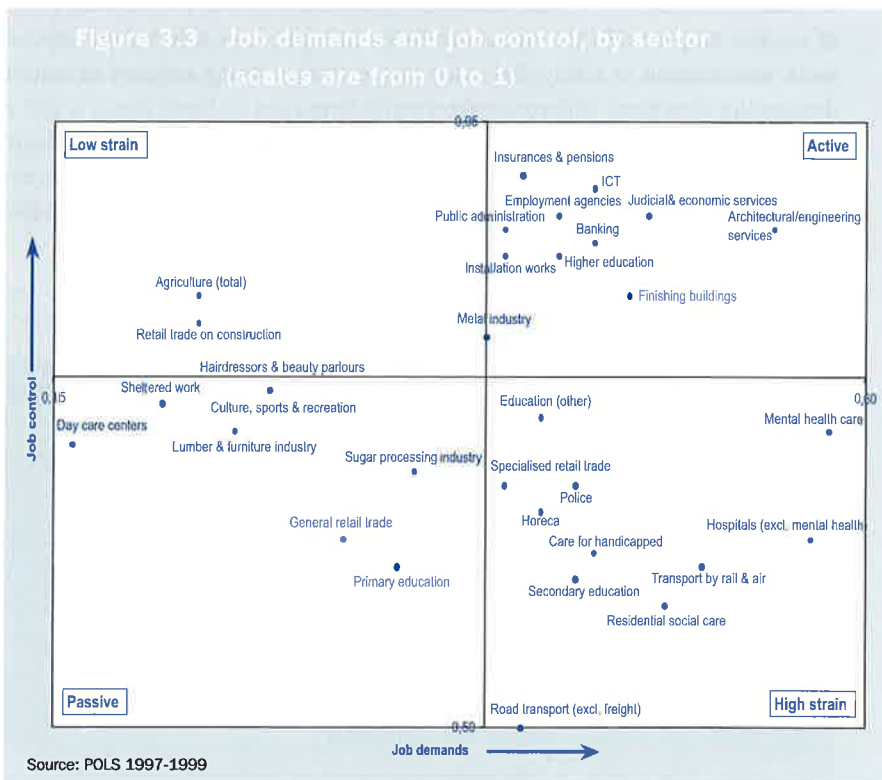
Two other indicators of job control, being free to interrupt one's work whenever one wants and being able to control the order in which work is carried out, show a great increase in 2001. Finally, the percentage of workers being able to control their work pace increased sharply in 1999 and has remained stable ever since (Table 3.2). The increasing level of job control that people experience may probably be explained by shifts in employment from manufacturing towards more service-oriented industries (Houtman, 2004). At EU level developments are somewhat different. There was a reduction of workers who report having low autonomy in Europe, but only at the beginning of the 1990s. Since 1995 however, the level of reported autonomy has remained stable (EFLIWC, 2001; Houtman, 2005).

A combination of the dimensions job demands and job control makes it possible to distinguish between four types of jobs: (1) high strain, (2) low strain, (3) passive jobs and (4) active jobs.

Generally speaking, jobs in health care, education, transport, hotels and restaurants are characterized as having high levels of job demands and low levels of job control, thus with a relatively high risk for work stress. This is illustrated in Figure 3.3.

A combination of high job demands and a high job control, resulting in more active learning opportunities, is found in financial and professional services, as well as in public administration.

Work that is characterised by both low demands and low control is most likely to be found among blue collar workers.



Little significant changes have taken place in the (perception of) professional development opportunities of employees over the period 1994-2002. In 2002 one in four workers said the match between their work and their educational credentials was poor. This figure is exactly the same as about ten years before. Also the percentage of people doing monotonous work and the number of people experiencing a lack of personal

development opportunities remained stable. A positive development is the increase in the proportion of employees who say they have good promotion opportunities, after the year 2000. In 2004 36% of the Dutch working population regarded their promotion opportunities as good. The percentage of people that feel they are not adequately compensated for their job has decreased slightly in the beginning of the new millennium, compared to the end of 1990s. However the figure is still higher than in the years before 1996. Finally, the majority of the Dutch workforce reported that they are happy in their work. This figure has remained stable over the period 1994-2004.

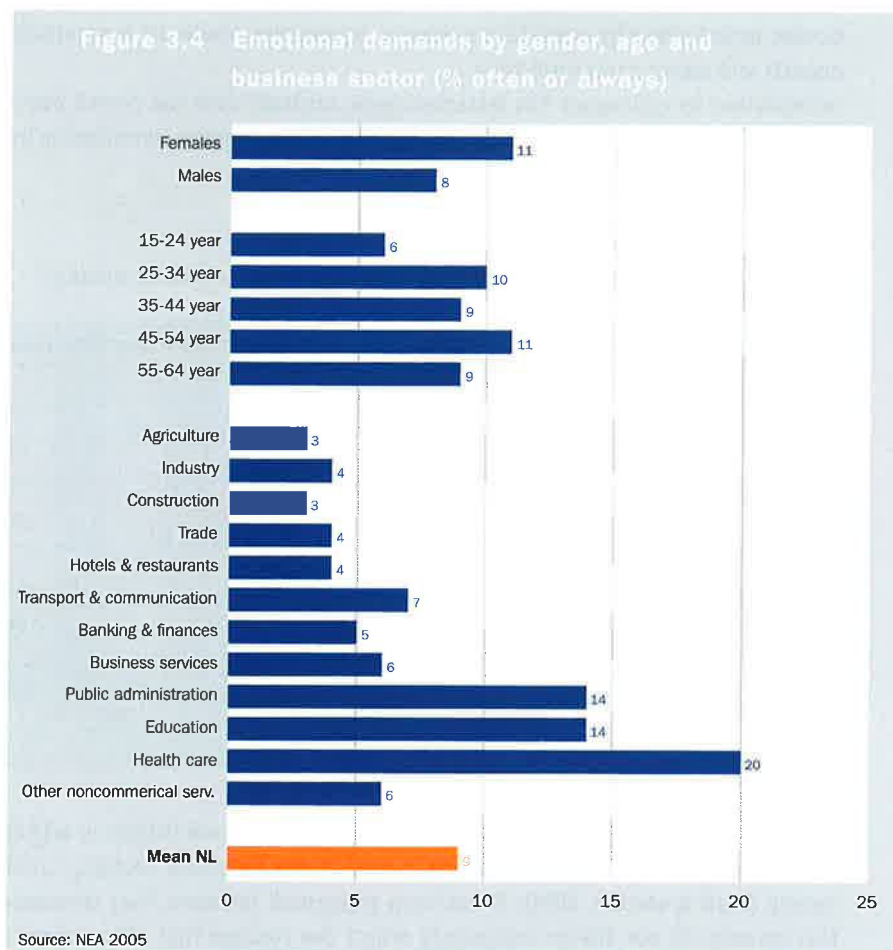
Job complexity and emotional demands are also important indicators of the psychosocial work environment (Houtman, 2005). Changes in the nature of work itself, like the increased use of information and communication technology, has led to higher mental workloads for employees. Also, shifts in employment, such as the growing proportion of workers employed in the service sector for example, have affected the psychosocial work environment in a way that more employees are being exposed to emotionally demanding situations. Unfortunately, trend information on these issues is still scarce. Table 3.3 provides an overview of the available information on job complexity and emotional demands. The number of employees that experience their work as complex or cognitively demanding appears to be rather stable over the period 2000-2004. No sufficient trend information is available on emotionally demanding work.

Table 3.3 Job complexity and emotional work (percentages)

	2000	2002	2003	2004
Job complexity				
Work demands intense thinking (often/always)	57	54	-	56
Have to remember a lot of information for a long period (often/always)	50	48	-	50
Work demands keeping thoughts focused (often/always)	90	86	-	87
Work demands a lot of attention (often/always)	80	77	-	77
Have to keep an eye on many things at work at same time (often/always)	74	72	-	70
Emotional demands				
Work brings you in emotional situations (yes, often/always)	11	-	-	12
Work is emotionally demanding (yes, often/always)	-	-	13	12
You get emotionally involved in your work (yes, often/always)	-	-	-	15

Source: TNO (TAS: 2000, 2002, 2004; NEA, 2003)

As may be seen in Figure 3.4, emotional demands are highest in jobs in health care, education and the public administration. This will have everything to do with the intensive contacts with clients in those sectors. Finally, emotionally demanding work is less common in very young employees (15-24 years).



3.4 Workplace violence and discrimination

As is the case in many countries in the European Union (see, for example, Di Martino et al., 2003), there has been a growing interest in the Netherlands in the issue of workplace violence. To study the prevalence and distribution of this phenomenon, questions on personal experiences involving sexual harassment, intimidation and physical violence were incorporated in the TNO Work Situation Survey in 2000. Recent research indicates that the tendency of increased workplace violence - especially by customers / clients - that was observed from 2000 until 2003 (Van den Bossche, 2004), seems to have stabilised in 2004 (Van den Bossche, 2005). However, one could also conclude that there has not been a clear reduction of exposure to intimidation and violence at work since the year 2000.

As shown in Table 3.4, workplace violence originates mostly from customers. In par-

ticular, intimidation by customers (patients, passengers, students) is mentioned frequently and increasingly until 2004.

Intimidation by colleagues has remained quite constant over the period 2000-2005. Still, a relatively large proportion of employees (14%) experience intimidation by their co-workers.

Table 3.4 Workplace violence, by year
(percentage of employees exposed to aggression in past 12 months)

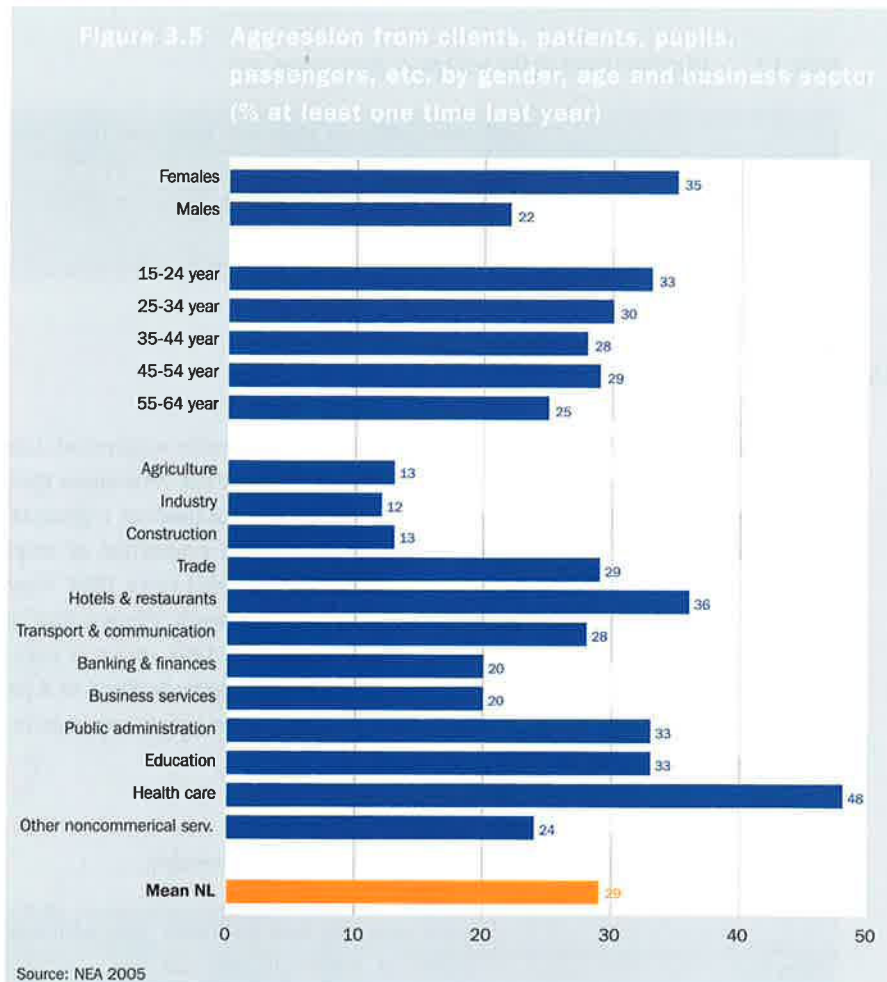
	2000	2002	2003	2004	2005
By customers (patients, passengers, students)					
Intimidation	21	22	27	21	21
Sexual harassment	5	7	9	5	7
Physical violence	7	7	9	6	7
Bullying	-	-	-	7	8
By colleagues					
Intimidation	15	13	15	14	14
Sexual harassment	3	3	5	3	3
Physical violence	1	1	2	1	1
Bullying	-	-	-	10	11

Source: TNO (TAS: 2000, 2002, 2004; NEA, 2003, 2005)

Up to 2004, the concept of intimidation by colleagues was used to refer to acts of mobbing/bullying, in the same way that it is used in the European Working Conditions Survey (Paoli & Merli , 2001). It has been suggested, however, that translations of this concept do not always adequately reflect the concept that often encompasses bullying, in the sense that intimidation refers more to threats of (physical) violence (Lehto & P rn nen, 2004). Therefore, a new indicator of bullying was introduced in the 2004 TNO Work Situation Survey. Although the original concept of intimidation was correlated to the new indicator of bullying, the distribution of this new indicator was quite different. In 2005 bullying by customers was mentioned by 8%, while 11% of the employees stated that they had been bullied by colleagues in the past year. Intimidation, on the other hand, originated mostly from customers, indicating that the two concepts are related but different.

Sectors such as health care, hotels and restaurants, education and public administration, where work involves frequent customer contact, are more vulnerable to intimidation by customers than other sectors, see Figure 3.5. Hence, the growing employment in these sectors (see chapter 1) may be part of the explanation for the increase in the number of employees that say they have been threatened by clients.

No significant differences between sectors are evident in intimidation by colleagues.



In 2005 2.5% of the employees that were questioned in the Netherlands Working Conditions Survey said they had been absent from work for more than a month because of workplace violence and aggression. Also, exposure to workplace violence significantly influenced employee's functioning; almost 3% of all employees said workplace violence impaired their functioning at work for over a month (Van den Bossche et al., 2006).

The issues of racial and gender discrimination are being monitored by the Permanent Quality of Life Survey (POLS). There was a decrease in both forms of discrimination between 1995 and 1996 (Table 3.5). Since 1996 on average 2% of all employees say they are aware of the existence of gender discrimination in their workplace. The same goes for racial discrimination.

Table 3.5 Discrimination in the workplace (percentage yes)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Discrimination by gender	4	5	2	3	2	2	2	2	2	2	2
Discrimination by race	4	4	1	2	2	2	2	3	2	2	2

Source: Statistics Netherlands/CBS, workers aged 18-65, working 12 hours/week or more

3.5 Physical risk factors

During the past ten years workers' perceptions of their exposure to physical risks have indicated some improvements (Table 3.6). In the context of the Permanent Quality of Life Survey (POLS) questions on dirty work and stench are used as a general (indirect) indicator for exposure to dangerous substances. The proportion of employees frequently involved in doing 'dirty work' has declined steadily since 1994. Nowadays almost one out of every five employees is exposed to dirty work. There is also a decrease with regard to frequent exposure to stench at work. In 1994 about 12 per cent of the total labour force said it was exposed to stench; this figure declined to 8 per cent in 2003. Unfortunately, no trend information is available for actual exposure to particular chemicals, organic and inorganic dusts.

Table 3.6 Trends in physical risk factors
(percentage of workers with the answer 'yes, frequently')

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Dirty work	23	21	21	19	19	18	18	18	17	19
Stench	12	10	10	8	9	8	8	8	7	8
Dangerous work	6	6	6	5	5	5	5	5	5	6
Noise	19	15	18	17	17	16	18	16	16	18

Source: Statistics Netherlands/CBS; workers aged 18-65, working 12 hours/week or more

An indication of the noise level which employees are being exposed to, is obtained by asking whether it is so noisy at the workplace that 'you have to raise your voice in order to make yourself heard'. The proportion of employees that frequently work under such conditions remained stable throughout the past ten years. The same applies to the frequency of carrying out dangerous work.

Exposure to ionizing radiation is monitored by the National Dose Registration and Information System (NDRIS). Research shows that the number of employees working with ionizing radiation increased from 31.000 to 35.000 in the past ten years. The

need for such employees increased, especially in the healthcare sector. At the same time actual exposure to ionizing radiation decreased because of the use of better protection measures (Van Dijk, 2004).

The percentage of employees who have no possibilities to control temperature at work fluctuated around 60 percent in the period of 1994-2004 (Table 3.6). The percentage of employees who have no possibilities to control ventilation at work was between 50 and 55 in that same period. Thus, no significant changes can be observed for these two indicators.

*Table 3.7 Temperature and ventilation control in the workplace
(percentage of workers claiming they are not able to control temperature or ventilation in the workplace)*

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Not possible to control temperature	59	57	60	60	57	61	60	58	59	60	58
Not possible to control ventilation	54	50	54	54	53	55	53	53	54	54	53

Source: Statistics Netherlands/CBS, workers aged 18-65, working 12 hours/week or more

A breakdown by sector shows that physical risks (combination of the topics mentioned above), are particularly concentrated in agriculture, construction and industry. The average proportion of employees being exposed in these sectors ranges between 20 and 25 percent. This situation appears to be largely unchanged since 1994.

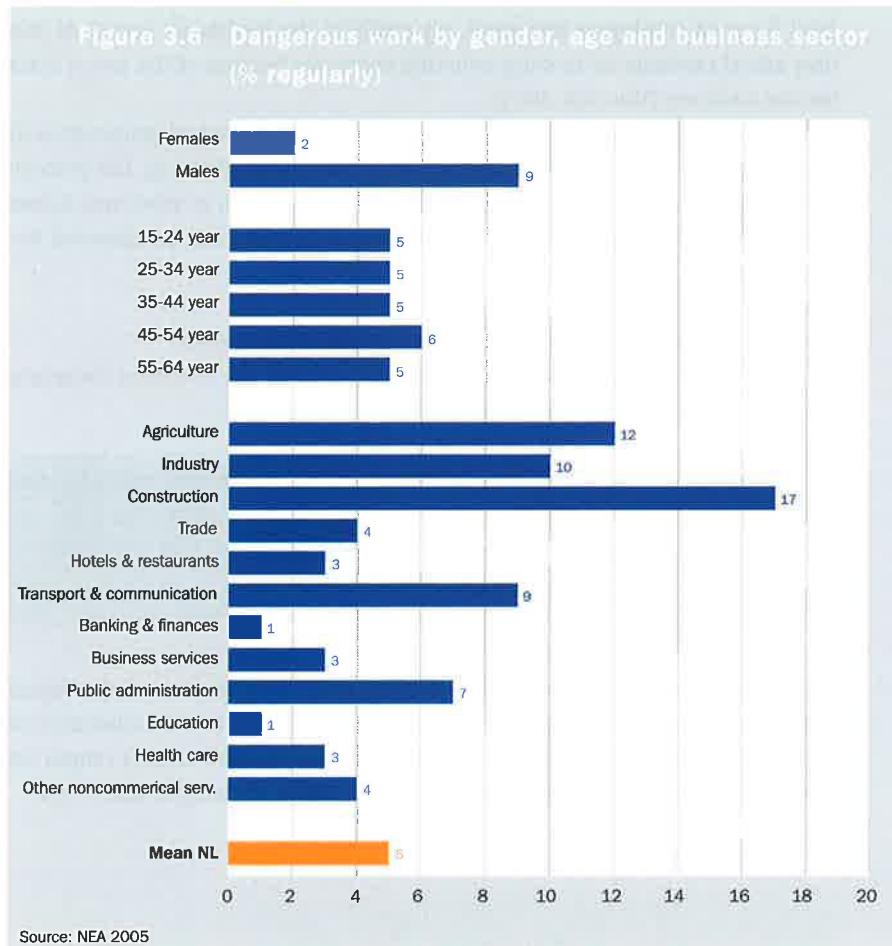
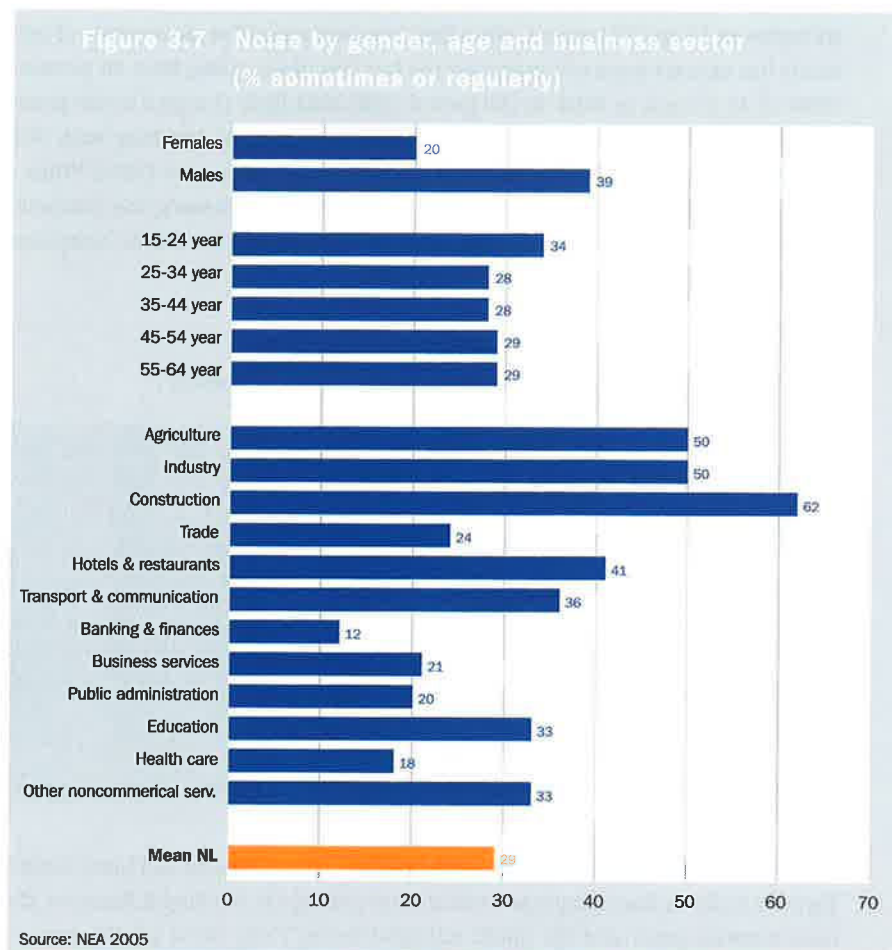


Figure 3.6 shows the differences between males and females, between age groups and business sector with respect to dangerous work. It may be clear that dangerous work is highest in the construction sector, followed by agriculture and industry, and transport & communication. The differences between males and females with respect to dangerous work is striking. There are almost no age differences.

With respect to noise in the workplace almost the same risk groups are found. Highest levels of noise are found in construction, industry and agriculture, see Figure 3.7. Again, the difference between males and females with respect to noise in the workplace is striking. And again, there are almost no age differences.



3.6 Ergonomic risk factors

Around 20 percent of employees in the Netherlands carried out physically heavy work in the period 1994-2003. Heavy work is one of the most important risk factors for back, neck, shoulder and arm pain or complaints (Ariëns et al., 2001). Another indicator of heavy work, using a lot of physical effort, remained stable as well in the period 1996-2003. A little less than one out of four employees frequently used a lot of physical effort on their job. Frequent sweating or heavy breathing at work has also been fairly stable over the last years, around 9 percent. Other important risk factors, especially those causing Repetitive Strain Injury, are a static working posture and repetitive movements with hands or arms. The number of employees exposed to static working postures remained stable, with percentages between 43 and 45 in the period 1996-2002, whereas percentages of those experiencing uncomfortable positions at work

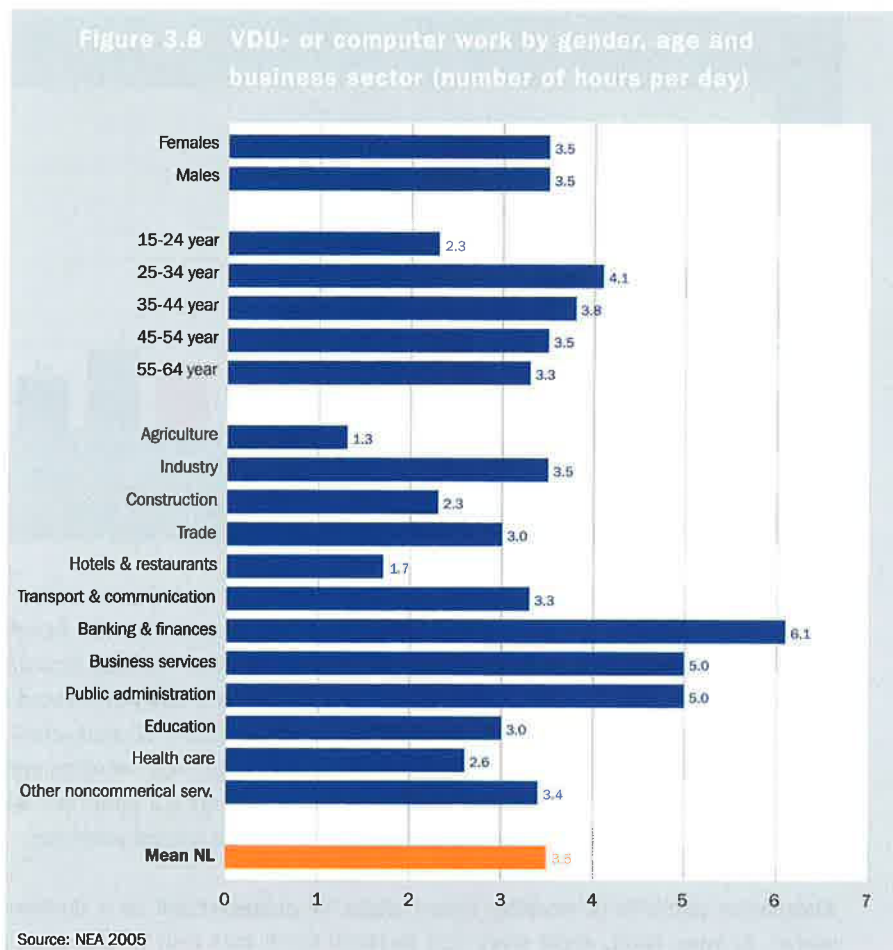
are between 13 and 16 percent. Work that involved repetitive movements of arms and hands has become more common over the last few years, rising from 40 percent (until 1999) to 45 percent in 2002. In the period 1996-2002 little changed in the percentage of employees that work with vibrating vehicles (10%-12%). Working with vibrating tools and machinery has also remained the same over that period (10%). When observing the most important risk factors of musculoskeletal disorders, the conclusion can be drawn that so far preventive measures aimed at work-related back complaints and RSI seem to have had little effect.

Table 3.8 Trends in ergonomic risk factors
(percentage of workers with the answer 'yes, frequently')

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Physically heavy work	21	20	21	21	20	19	19	20	19	21
Lot of physical effort	-	-	24	24	23	22	22	23	23	23
Sweating or heavy breathing	-	-	10	10	9	9	8	10	9	-
Uncomfortable position	-	-	16	14	13	13	14	15	13	-
Static working posture	-	-	45	43	43	44	43	45	45	-
Repetitive movements	-	-	41	40	39	41	42	44	45	-
Vibrating vehicles	-	-	10	12	11	11	10	12	10	-
Vibrating tools and machinery	-	-	10	10	10	10	10	10	10	-

Source: Statistics Netherlands/CBS; workers aged 18-65, working 12 hours/week or more

Working with a computer or VDU-work involves repetitive arm and hand movements. Figure 3.8 shows that computer work is most common in banking & finances, the business services sector and the public administration. Thus, these are the sectors most liable to RSI complaints. Computer work is not at all common in agriculture and the hotels and restaurants sector.

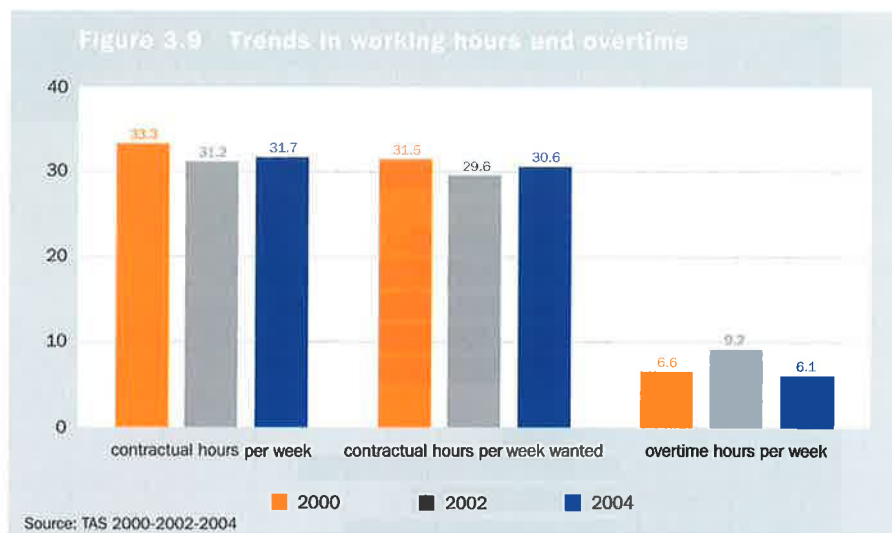


3.7 Working hours

In this paragraph we will address the main developments in the field of working hours and work time patterns. In particular, we will describe developments in the duration of the workweek and in working on non-standard hours. The issues of overtime and part-time working will be discussed in more detail in chapter 6.

The TNO Work Situation Survey shows (see Figure 3.9) that in the period 2000-2004 employees worked between 31 and 33 contractual hours a week. There is a slight decrease in contractual working hours. The Dutch employees want to work even less, viz. about 1-2 hours per week less than they actually work.

In addition, employees in the Netherlands work a least 6 hours per week in overtime (paid and unpaid together).



The Survey on Employment and Earnings (EWL), carried out by Statistics Netherlands/CBS, provides information on working hours' duration as well. The CBS figures support the findings of TNO, as far as the decrease in contractual working hours is concerned. This downward trend in contractual working hours is less pronounced however. According to Statistics Netherlands/CBS, the average number of contractual hours 32.1 hours in 1995, 30.7 hours in 2000 and 30.2 hours in 2002. Paid overtime remained stable. Both in 2000 and 2002 employees worked an average 0.5 hours per week in paid overtime. Unfortunately, no information is available on unpaid overtime.

Alternative patterns in working hours might be characterized as a double-edged sword. Evening work, night work and weekend work may lead to tiredness and to disruptions to the organisation of private life. On the other hand, for some people the opportunity to work irregular hours may facilitate the reconciliation of work and caring tasks.

According to Statistics Netherlands/CBS, working irregular hours is common in the Netherlands. The Permanent Quality of Life Survey (POLS) provides trend information on non-standard working hours (see Table 3.9).

Table 3.9 Non standard working hours (percentage 'sometimes' yes)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Evening or night work	62	64	60	63	63	60	60	59	60	57	59
Weekend work	58	60	57	59	58	58	56	55	56	55	56
Shift work	10	11	11	9	9	8	10	9	9	9	9

Source: Statistics Netherlands/CBS; workers aged 18-65, working 12 hours/week or more

Over the period of 1994 to 2004 on average 61% of the Dutch employees said they 'sometimes' worked in the evening or at night. When we compare the period 1994-1998 to the subsequent six years, there appears to be a slight decrease in the number of people saying that they 'sometimes' worked in the evening or at night. The average percentage for working 'sometimes' on Saturdays and Sundays is 57%. A slight decrease can be seen here as well. This, however, is less distinct than in the case of evening work. These findings are rather surprising given the fact that the Opening Hours (Shops) Act came into force in 1996, which gave employers more freedom to decide on their opening hours themselves.



In the TNO Work Situation Survey, working on Saturdays and Sundays is asked in a different way. In that Survey the respondents are asked to indicated on what part of the day they 'normally' work. Using this method, substantially lower figures are found (see Figure 3.10). Working on Saturday morning increased from 12 % in 2000 to 21 % in 2004. Working on Saturday afternoon increased from 10 % in 2000 to 17 % in 2004. Nowadays about 9-10 % of the employees work on Sunday morning and on Sunday afternoon.

Finally, about one out of ten employees works in shifts. This figure is rather stable. According to Beckers (2004), the eight hours shift is by far the most common type of shift work (40%), followed by the 12 hours shift (31%).

3.8 Emerging risks

In this final paragraph, we present the results of an expert forecast, supported with

a literature review on emerging risks within the area of organisational, social and human risks (Houtman et al., 2005). The project was part of a larger project on emerging risks which aims at raising awareness and assisting in the early identification of possible and confirmed new risks in health and safety at work (OSH= Occupational Safety and Health).

For this project, an 'emerging OSH risk' was any occupational risk that is both 'new' and 'increasing'. By 'new' was meant:

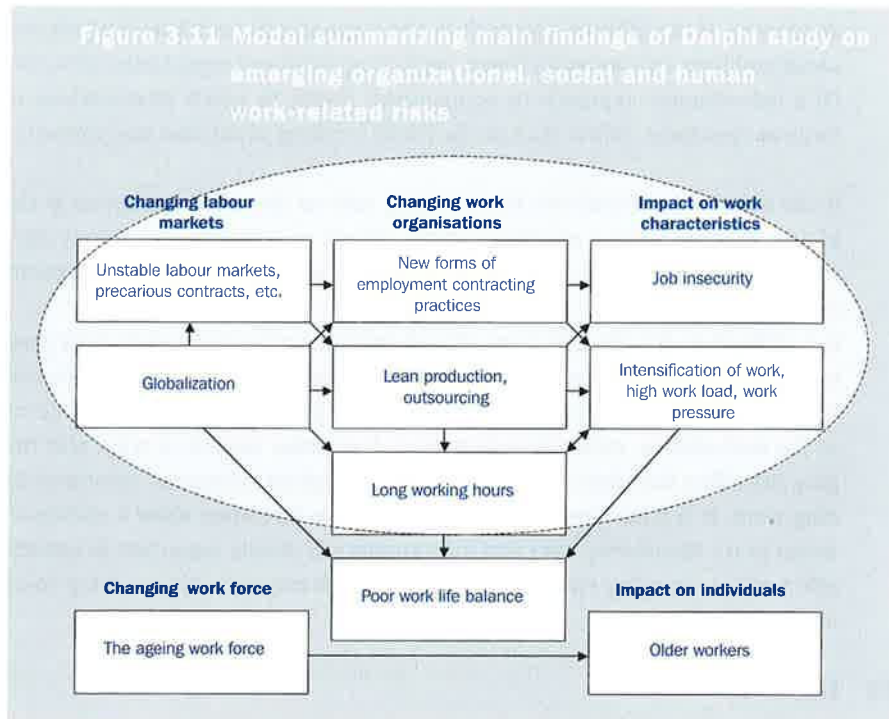
- the risk is new and caused by new processes, new technologies, new types of workplaces, or social or organisational change; or,
- a long-standing issue is newly considered as a risk, due to a change in social or public perceptions (e.g. stress, bullying); or,
- new scientific knowledge allows a long-standing issue to be identified as a risk (e.g. Repetitive-Strain-Injury (RSI) where cases have existed for decades without being identified as RSI because of a lack of scientific knowledge).

The risk is 'increasing' if either the:

- number of hazards leading to the risk is growing, or the
- likelihood of exposure to the hazard leading to the risk is increasing, (exposure level and/or the number of people exposed), or the
- effect of the hazard on the workers' health is getting worse.

Aiming at expert forecasts, a Delphi study was performed. An 'expert' was considered to be a person with at least 5 years of experience in the field of knowledge concerned. Three consultation rounds were held amongst the experts in order to identify their opinions within the area of social, organisational and human risks. In the first round a group of 62 experts was approached with a questionnaire which was merely meant to 'trigger' emerging risks on the basis of items relevant to the field of organisational, social and human risks from the thesaurus that was developed by the European Agency for Occupational Safety and Health in Bilbao. The experts were asked to describe emerging risks on the basis of these items, to prioritise them and comment upon them. After this first round, the answers were reorganised in a new questionnaire that was presented to 79 experts in different EU countries, from countries outside the EU and from international organisations. The response of the experts was modest and became less in the two consecutive rounds (42%, 27% and 21% in the three rounds). Experts responded from Finland, Sweden, Denmark, Ireland, UK, The Netherlands, Belgium, Germany, Austria, France, Portugal, Spain, Italy and the USA.

The model presented below (Figure 3.11) summarizes the findings of the Delphi study and presents the main emerging risks when integrating the expert ratings, particularly those of the third round.



According to the experts emerging risks are related to (in order of importance):

- unstable labour markets, job insecurity, precarious contracts, the (increased) use of new forms of employment contracting practices
- globalisation, which in itself may be responsible for the increase in precarious contracts and job insecurity but, at a more organisational level, also means more lean production, outsourcing, which is associated with the intensification of work, high work load and high work pressure
- all the changes as presented above lead on average to long working hours
- the globalisation, together with technological and organisational developments, results in an intensification of work, high work load as well as long working hours, gives more meaning to the work-life balance, which even appears to be a line of thought used to improve participation of women into the labour market (for whom the work-life balance in general is experienced as more important than for men)
- the demographical change that hits Europe (and all developed countries) hard is that of the ageing workforce. Issues related to old age were also rated as emerging.

A literature search confirms the expert forecast in the field of 'organizational, social and human risks'. The following issues were identified as high priorities: (1) the need to harmonize the legislation governing occupational health in the EU countries; (2) the

dominance of the lifestyle approach in the occupational health field which converts social problems into individual ones, neglecting social and organizational factors, and (3) a reductionism approach to occupational health in which interventions mainly focus on treatment, rather than on the whole working population and prevention.

It can thus be concluded that the emerging risks as identified by experts in the area of organisational, social and human risks are not so very new, but mainly appear to emerge because they are growing in importance and/or put a growing population at risk.

It is difficult to directly link these alleged emerging risks to the indicators presented in this chapter. The expected increase in working hours can not be confirmed (yet) in national statistics. Also, work pressure seems to be stabilising or even decreasing in The Netherlands, rather than increasing. It is rather unclear in what way the merging risk affect the other indicators, such as workplace violence or emotional demanding work. It is clear however, that most of these indicators show a stabilisation in recent years. Monitoring risks and risks groups will remain important to establish the effect of the emerging risk presented above, with respect to the working conditions of employees.

3.9 Literature

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Chapter 4

Work in the Netherlands and the EU compared

Peter Smulders

Summary

The Third European Work Environment Survey data has been analysed in an effort to find the differences between the fifteen old EU member states and the twelve acceding and candidate countries as regards their work environment. The analysis focuses on sixteen work indicators pertaining to industry, organizational size, work environment, working hours and work-related health issues. A cluster analysis shows that the twenty-seven countries can be combined into five clusters: northwest Europe, central Europe with Italy and Portugal, Greece and Spain as a couple, and Cyprus and Romania as two one-country clusters.

The main results of the analysis are: (1) Complex, computerized and autonomous work as well as repetitive work are mainly found in the richer western and northern European countries. (2) Work pressure is also highest in these countries, though Cyprus and Malta score very high on work pressure too. (3) Long working hours, non-standard working hours, heavy work and job hazards are mainly found in the new central and southern European countries and in Greece and Spain. (4) Work-related stress and fatigue and work-related musculo-skeletal pains are somewhat more common in the central and southern countries, but Finland, Sweden, Denmark, and France score high on them as well. The north-south hypothesis pertaining to the work environment (more challenging jobs and fewer job hazards and work-related health problems in the north) is only partly confirmed.

4.1 Introduction

In the past few decades, the growth of multinational corporations, international investments and international cooperation has led to cross-national interest in organizational issues such as technological development, organizational design, culture and work values, working conditions, leadership, stress and motivation. This comparative interest has been reinforced by European legislation and the European Union enlargements in 1981, 1986, 1995 and 2004. Numerous measures have been and will be implemented by the European Union to do away with barriers to free trade, capital and service transfers, people's mobility and obstacles arising from rules and regulations. The consequences for companies in Europe will be enlarged markets, more competition as well as cooperation, increased scale through mergers and the closure of small firms. The results of cross-national organizational research may have practical

value for the human resources and policies of multinational enterprises, governments and European authorities.

Literature on work and organization can lead to the conclusion that although there is lively interest in cross-national organizational investigations, barely any consistent and comparative studies have been conducted on the quality of the work environments in various countries. "In fact, information often either does not exist or is not accessible or, if available, is not comparable because of the differences between the monitoring systems of the various member states" (Paoli 1992). Against this background, the European Foundation for the Improvement of Living and Working Conditions in Dublin took the initiative in 1991-1992 to carry out the First European Survey on the work environments in all twelve EU countries (Paoli 1992). The theoretical basis for the examination was linked to the Job Demands - Job Control - Job Support Model of Karasek (1979), and its effects on workers' health and well-being. Because of its relevance to workers' health and well-being, information on working conditions and working hours is also included in the survey.

Based on the dataset of the First European Survey conducted by the European Foundation, Smulders, Kompier and Paoli (1996) carried out a study on the differences and similarities in the work environment of the twelve countries that were EU member states in 1992. A cluster analysis shows that the differences in the work environments in Europe could best be summarized as four clusters: the northern cluster (Denmark, West Germany, former East Germany, the Netherlands and Great Britain), the mid-western cluster (Belgium and Luxembourg), the southern cluster (Spain, Portugal, France, Italy and Ireland), and the isolated southern cluster (Greece). Compared to other European countries, the overall quality of working life in the southern countries and Ireland was below average. In the northern and mid-western European countries, the quality of the work environment was above average. This can be called the north-south differentiation with respect to the work environment in Europe. The same differentiation is also seen in other cross-national studies. Six studies were found that cluster the countries into more or less homogeneous groups with respect to work-related values or beliefs, the importance of work goals, leadership styles, job satisfaction and so forth (Haire, Ghiselli and Porter 1966, Sirota and Greenwood 1971, Ronen and Kraut 1977, Hofstede 1980, Griffeth, Hom, Denisi and Kirchner 1985, Brodbeck, Frese and Akerblom 2000). One overall conclusion in these studies is that there is a clear north-south differentiation in Europe with respect to these work-related characteristics. The question however is whether there is also a north-south differentiation with respect to countries' work environments in far more than the twelve EU member states in the analysis. In part, this chapter addresses this question.

In 1996 the European Foundation for the Improvement of Living and Working Conditions in Dublin gathered data for the Second European Survey, again on the physical, climatic and psychosocial working conditions, social and material support in the job situation, job control, and working hours (Paoli and Merllié, 2000). And in 2000 the Third Survey on the fifteen EU member states was carried out and reported

(Paoli and Merllié, 2001). In 2001 the Third Survey was expanded to also include the ten acceding and the two candidate countries (Bulgaria and Romania). The ten newcomers that joined the EU on 1 May 2004 were Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic and Slovenia. Bulgaria and Romania will join the Union in 2007, providing they meet the required standards of readiness in time.

The European Foundation published several reports based on the further analysis of the third survey dataset. They focus on such topics as work organization and health, types of employment and health, technology and working conditions, time and work intensity, duration of work, employment status, gender, age, and sectorial profiles of working conditions. But up to now, no combined analysis has been conducted of the fifteen old and the twelve new EU member states. This chapter addresses the differences and similarities between today's twenty-five EU member states and the two candidate countries, and is based on a secondary analysis of the original 2000-2001 EU data described above.

We summarize our research questions as follows:

1. *What are the relative positions of the various European countries on the work environment indicators and how large are the differences and similarities between the twenty-seven countries?*
2. *Which EU member states and candidate countries cluster together, in other words which ones are similar and which ones differ?*
3. *Is there a north-south differentiation between the European countries on work environment, with the northern countries in a better position?*

4.2 Method

Data collection

The Third Survey on the work environment in the fifteen EU member states was carried out in March and April 2000. The sample included 21,500 employees and self-employed people (1,500 in each country with the exception of Luxembourg where data was collected from 500 workers). The fieldwork for the twelve acceding and candidate countries was done in May and July 2001. The samples in the twelve countries included 11,500 employees and self-employed people (1,000 in each country with the exception of Malta and Cyprus, where data was collected from 500 workers). The samples are representative of the work force distribution in each country by occupation, gender, age, sector and company size. The workers were interviewed face-to-face at home. The questionnaires were developed by experts from various countries and representatives of trade unions and employer organizations at the EU level. Both the questionnaires (Paoli and Merllié 2001, Paoli and Thirion 2003) include the same questions on age, gender, marital status, activities at home, country, sector of industry and company size as well as questions on the work environment (such as physical

and climatic working conditions, job demands, job control, working with a computer, working hours etc).

Data analysis

For reasons of comparability, all the self-employed people and all the workers above the age of 65 are excluded from the dataset analysed here. This means the 32,760 workers in the 27-country sample have been reduced to 27,043 employees aged 15 - 64. Table 4.1 gives a description of the sixteen indicators used in the analysis.

Table 4.1. Descriptive Statistics

	N	Mean
1 Working in agriculture, hunting, forestry, fishing (no-yes)	26,925	6.4
2 Working in industry (mining, quarrying, manufacturing) (no-yes)	26,925	23.7
3 Working in the commercial service sector (no-yes)	26,925	9.2
4 Organizational size: number of people working in the local unit of company *)	25,917	4.5
5 Working week: hours usually worked a week	26,765	38.7
6 Weekend work: number of times a month works on Saturday or Sunday	26,687	0.96
7 Working shifts (no-yes)	26,590	22.2
8 Job complexity: learning new things, complex tasks, solving problems etc. (no-yes)	26,553	75.2
9 Job autonomy: in order of tasks, work method, work speed (no-yes)	26,878	64.7
10 Job involves repetitive tasks of 5 sec., 30 sec. or 1 min. (no-yes)	25,770	14.3
11 Work pressure: work at very high speed to tight deadlines **)	26,403	3.4
12 Job hazards: exposed to vibrations, noise, heat, cold, chemicals **)	26,979	1.9
13 Heavy work: exposed to tiring repetitive heavy work **)	26,985	2.9
14 Working with a computer **)	26,914	2.7
15 Work-related stress, fatigue, headaches, sleeping problems etc. (no-yes)	27,043	14.0
16 Work-related pains in the back, shoulder, neck, upper and lower limbs (no-yes)	27,043	23.8

*) 1 = works alone, 2 = 2-4 persons, 3 = 5-9 persons, 4 = 10-49 persons, 5 = 50-99 persons, 6 = 100-249 persons, 7 = 250-499 persons, 8 = 500 and over

**) 1 = never, 2 = almost never, 3 = 1/4 of the time, 4 = 1/2 the time, 5 = 3/4 of the time, 6 = almost all the time, 7 = all the time

Firstly, there are four employment indicators. The first three variables are dummy variables derived from a question on the main activity of the organization where the worker is employed. The first is on “employment in agriculture, hunting, forestry or fishing”, the second is on “employment in industry” (mining, quarrying, manufacturing), and the third is on “employment in the commercial service sector” (financial intermediation, real estate and business activities). They cover 39% of the work force in the twenty-seven countries. These three dummy variables are expected to express

the employment range or the work force distribution over the sectors of industry in the various European countries. As a macro working life indicator, we also distinguish the size of the organizations where people work. Organizational size is the answer to the question *How many people work in the local unit of your company?* and is categorized from 1 = works alone, to 8 = 500 and over.

Three working hour indicators are also included in the study:

- The working week is measured by the number of hours one usually works a week.
- Weekend work is the mean score of two questions, *How many times a month do you work on Saturday?* and *How many times a month do you work on Sunday?*
- Shift work is measured by asking *Do you work shifts?* (no or yes).

Seven work environment indicators are distinguished.

- Job complexity is the mean score on five questions: *Does the job involve complex tasks? Does the job involve learning new things? Does the job involve solving unforeseen problems? Does the job involve assessing the quality of your own work? and Does the job involve meeting precise quality standards?* They all have no-yes answer categories. Cronbach's alpha reliability coefficient of the five questions is 0.63.
- Work autonomy (or Job Control) is the mean of three questions: *Are you able to choose or change the order of your tasks? Are you, able to choose or change the method of your work? and Are you, able to choose or change the speed or rate of your work?* They all have no-yes answer categories. Cronbach's alpha is 0.77.
- Repetitive tasks is the mean score on three questions: *Does your job involve repetitive tasks of less than 5 seconds? Does your job involve repetitive tasks of less than 30 seconds? and Does your job involve repetitive tasks of less than 1 minute?* They all have no-yes answer categories. Cronbach's alpha is 0.81.
- Work pressure is measured by taking the mean score of two questions: *Does your job involve working at a very high speed? and Does your job involve working to tight deadlines?* There are seven possible responses to both questions: 1 = never, 2 = almost never, 3 = 1/4 of the time, 4 = 1/2 the time, 5 = 3/4 of the time, 6 = almost all the time, 7 = all the time. Cronbach's alpha is 0.67.
- Job hazards is the mean score on six questions: *Are you exposed to vibrations from hand tools or machinery? Are you exposed to noise so loud that you have to raise your voice? Are you exposed to temperatures that make you perspire even when you are not working? Are you exposed to low temperatures indoors or outdoors? Are you exposed to breathing vapours, fumes dust, or dangerous substances? and Are you exposed to handling or touching dangerous products or substances?* The answers can be chosen from a seven-point scale as described above. Cronbach's alpha is 0.80.
- Heavy work is the mean score on three questions: *Does your job involve carrying or moving heavy loads? Does your job involve painful or tiring positions? and Does your job involve repetitive hand or arm movements?* All three are measured with the seven-point scale described above. Cronbach's alpha is 0.69.

- Computer work is measured by one question: *Does your job involve working with a computer?* It is also measured with a seven-point scale.

Lastly, two work-related health indicators are included.

- Work-related stress and fatigue is the mean score on six questions. *Does your job cause (1) stress, (2) overall fatigue, (3) headaches, (4) sleeping problems, (5) anxiety, (6) irritability?* Cronbach's alpha 0.71.
- Work-related pain in the back, shoulders and limbs is the mean score on four questions: *Does your job cause (1) backaches, (2) muscular pains in the shoulders and neck, (3) muscular pains in the upper limbs, (4) muscular pains in the lower limbs?* Cronbach's alpha 0.76.

The sample data are corrected using a weighting procedure. A national weighting procedure has been carried out for each country using marginal and intercellular weighting. The description of the universe is derived from Eurostat Labor Force Survey. National weighting procedures are carried out based on this universe description. In all the countries, sex, age, occupation, sector of activity and region are used in the weighting procedure. As regards the work environment, it is not possible to check the validity of the questionnaire since there is no comparable objective data from observations or non-obtrusive sources. The questions on the gender distribution and division of employment over the economic sectors can be checked using official objective Eurostat data. According to the data (Franco and Jouhette 2003), in 2002 55% of the work force were male and 45% female. In this survey the figures are also 55% and 45%. Again according to official data, 9% of the total European work force (acceding and candidate countries included) are employed in agriculture, 29% in industry and 62% in the service industry (EC/Eurostat 2003). In this survey the figures are 6%, 32% and 62% respectively. The figures allow us to have confidence in the data collected for this study. A final comment should be made on the relations between the sixteen indicators. The strongest correlations among the sixteen indicators in the analysis are between heavy work and job hazards ($r = .51$), heavy work and work-related pains in the back, shoulders and limbs ($r = .42$), heavy work and work pressure ($r = .33$), and shift work and weekend work ($r = .30$). Almost all the other relations are below .20. This means the sixteen indicators are relatively independent of each other and no indicators measure almost the same concept.

4.3 Results

Now it is time to go back to our first question: *What is the relative position of the various European countries on the work environment indicators? In other words: What work environment indicators do the various EU member states score high and low on?*

The differences between the European countries are examined using ANOVA's and are strongly significant ($p < .0001$) on all sixteen characteristics.

Table 4.2. Country Means on Indicators for Working Hours and Work Environment

Country	length of working week in hours	hours of weekend work a month	% shift work	% complex work	% autonomous work	% repetitive tasks	work pressure (1-7)	exposed to job hazards (1-7)	heavy work (1-7)	computer work (1-7)
Austria	37.7	0.84	15.6	80.7 (6)	64.9	12.6	3.61 (9)	1.82	2.78	2.70
Belgium	35.3	0.76	23.7	79.6 (9)	62.9	11.6	3.06	1.76	2.77	3.29 (4)
Denmark	35.4	0.75	9.0	91.5 (1)	81.1 (3)	14.7 (8)	3.24	1.66	2.65	2.80 (10)
Finland	39.2	0.88	22.9	87.4 (3)	74.0 (5)	27.6 (2)	3.88 (4)	2.01	3.14 (8)	3.20 (5)
France	36.5	0.95	21.4	80.1 (7)	67.4 (9)	18.5 (5)	3.26	1.99	3.46 (3)	2.95 (9)
Germany	36.3	0.79	22.2	75.9	66.0	14.3 (10)	3.55 (10)	1.84	2.71	2.55
Greece	38.7	1.35 (1)	24.9 (10)	53.1	44.6	19.7 (4)	3.62 (7)	2.19 (4)	3.53 (1)	2.15
Ireland	37.6	0.99 (10)	20.6	71.1	56.8	20.4 (3)	3.37	1.95	2.84	3.10 (7)
Italy	37.7	1.25 (4)	26.3 (7)	68.7	63.5	11.1	3.20	1.83	2.83	2.62
Luxembourg	37.9	0.97	17.9	73.1	66.2	11.7	3.16	1.86	2.76	3.15 (6)
Netherlands	32.5	0.75	12.5	87.8 (2)	82.6 (2)	14.7 (9)	3.64 (6)	1.71	2.87	3.78 (1)
Portugal	39.6	0.81	10.4	63.3	53.8	16.6 (6)	2.75	1.94	3.20 (5)	2.31
Spain	38.5	0.93	26.8 (5)	70.8	54.2	31.0 (1)	2.83	2.27 (2)	3.50 (2)	2.42
Sweden	37.5	0.77	18.6	83.0 (4)	80.6 (4)	13.3	3.99 (2)	1.80	3.16 (7)	3.02 (8)
United Kingdom	36.8	1.08 (8)	25.5 (8)	81.7 (5)	69.2 (8)	15.8 (7)	3.62 (7)	1.86	2.84	3.52 (2)
Cyprus	41.1 (9)	0.89	11.2	67.5	61.3	12.2	4.32 (1)	2.43 (1)	3.38 (4)	2.64
Czech Republic	41.3 (8)	0.80	27.2 (4)	72.4	71.0 (7)	13.0	3.32	1.90	2.66	2.75
Estonia	41.9 (5)	1.17 (6)	21.5	79.7 (8)	74.0 (6)	11.9	3.07	2.15 (6)	2.90	2.41
Hungary	41.9 (5)	0.79	22.5	68.4	67.1 (10)	7.2	3.54	2.07 (9)	3.18 (6)	2.64
Latvia	43.6 (2)	1.25 (3)	21.9	61.4	60.7	10.1	2.68	2.07 (10)	2.79	1.99
Lithuania	41.4 (7)	1.02 (9)	21.5	55.0	59.7	13.6	2.53	1.85	2.74	1.89
Malta	39.3	1.21 (5)	22.4	72.5	92.9 (1)	7.0	3.89 (3)	2.11 (8)	3.03 (9)	2.49
Poland	41.0 (10)	1.09 (7)	27.8 (3)	70.1	58.0	8.6	3.40	1.86	2.61	2.26
Slovak Republic	42.3 (4)	0.71	25.4 (9)	67.9	60.8	7.8	3.26	2.21 (3)	3.00	2.42
Slovenia	39.5	0.90	26.7 (6)	79.4 (10)	65.0	6.9	2.33	2.05	2.42	3.32 (3)
Bulgaria	42.4 (3)	0.98	31.0 (2)	58.6	53.3	11.2	3.44	2.18 (5)	3.03 (10)	2.05
Romania	44.4 (1)	1.32 (2)	31.2 (1)	75.0	55.1	5.9	3.82 (5)	2.13 (7)	2.98	1.76
All 27 countries	38.7	0.96	22.2	75.2	64.7	14.3	3.42	1.93	2.94	2.69
Significance of differences between all the countries	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

The rank numbers of the ten highest scoring countries on each indicator are in parentheses.

Table 4.2 shows the mean scores of the twenty-seven European countries on the indicators representing working hours and the work environment and makes it possible to draw the following more general conclusions:

- Long working hours and non-standard working hours are mainly found in the more agriculture-oriented and new central and southern countries.
- Complex, computerized and autonomous work is mainly found in the richer western and northern member states Finland, Sweden, Denmark, the Netherlands, France and the United Kingdom.
- Perhaps contrary to expectations, repetitive work is mainly found in the western countries, especially the ones where there is still ample industrialized and heavy work.
- Work pressure is highest in the older and richer EU member states such as Sweden, Finland and the Netherlands, though there are some exceptions (Cyprus and Malta score very high on work pressure).
- Heavy work and job hazards are mainly found in the new central and southern countries such as Romania, Bulgaria, the Slovak Republic, Hungary, Cyprus, and Malta, but also in Greece and Spain.

The second goal of this analysis is to find out which countries bear similarities when all sixteen work indicators are taken into account. To find the similarities and differences, a cluster analysis has been carried out on the mean country scores. Cluster analysis is the search for relatively homogeneous groups of cases or in this case countries. A cluster analysis is in essence a factor analysis in which variables and cases or countries are exchanged. The technique minimizes the differences in the country clusters and maximizes the ones among the country clusters (SPSS, 2002). The distance between the countries is expressed in the Euclidean distance, which is the sum of the differences over all the sixteen country scores. Since these country scores include dichotomies, 7-point scales, age (15-64) as well as working hours a week, the country scores are standardized before introducing them into the cluster analysis.

Small distances between countries indicate that fairly homogeneous countries are merged. Large distances indicate that dissimilar countries are combined.

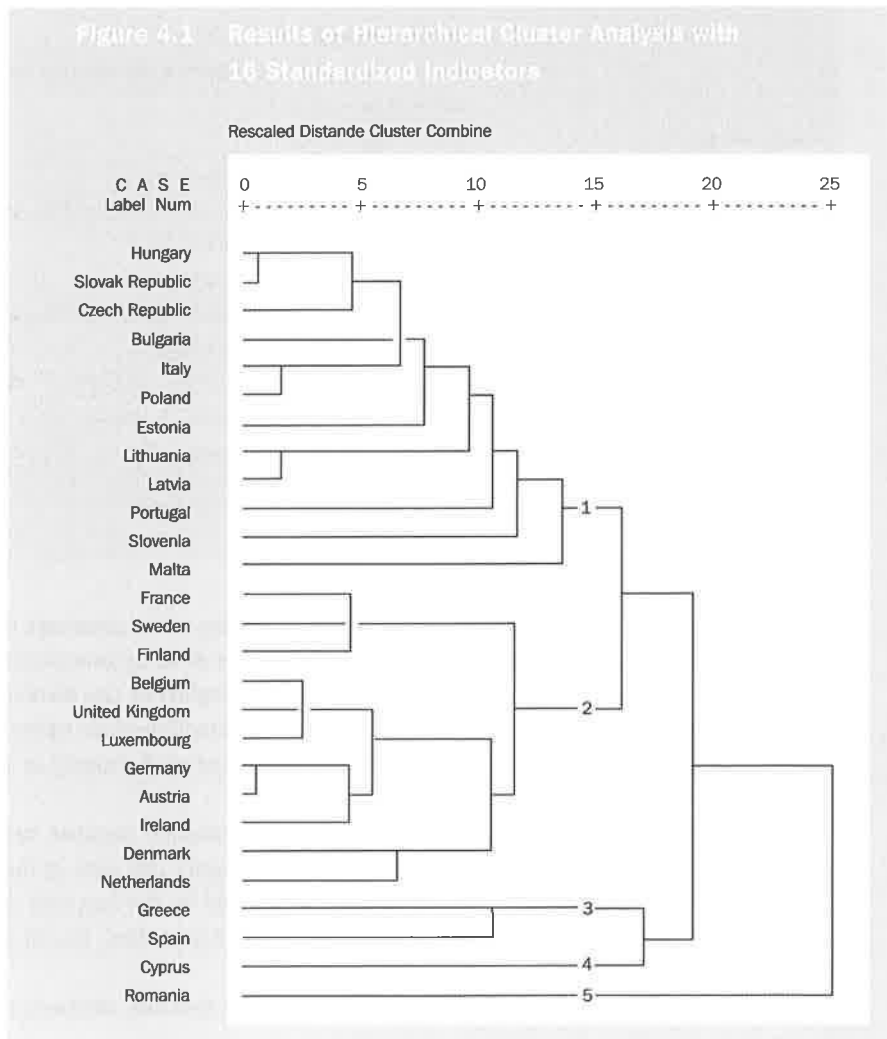
One way to visually represent the steps in the hierarchical clustering solution is by using a dendrogram (Figure 4.1). It does not show the actual distances but the rescaled distances to numbers between 0 and 25. The ratio of the distances between the steps is preserved. The figure shows the clusters being combined and the values of the coefficients (squared Euclidean distance between two cases) at each step. The distances between the cases or clusters can be used to decide how many clusters are needed to represent the data. The agglomerating is usually stopped as soon as the increase between two adjacent steps becomes relatively large.

The figure shows that the first two groups of countries taken together are Hungary and the Slovak Republic, and Germany and Austria. They are the most similar of all the countries on the sixteen work indicators. In the second step Lithuania and Latvia, and

Italy and Poland are taken together. In the third step, Belgium, Luxembourg and the United Kingdom are combined as a trio, and so forth. Cyprus and Romania are least similar to the other countries. They are combined with the other countries in the last steps of the clustering process.

The dendrogram shows that a five-cluster solution is appropriate, since it is easily interpretable and occurs before the distances where the clusters are combined become too large. The five clusters may be labelled as follows:

1. Central Europe and Italy and Portugal
2. Northern and western Europe
3. Greece and Spain
4. Cyprus
5. Romania



What are the similarities and differences as regards the work environment between the five clusters?

The differences between the five clusters on the sixteen work indicators are all significant with the exception of weekend work ($p = .06$), autonomous work ($p = .08$) and work-related pains in the back, shoulders and limbs ($p = .48$). The main characteristics of the five country clusters are presented in Table 4.3.

Table 4.3 Main Characteristics of the Five Clusters

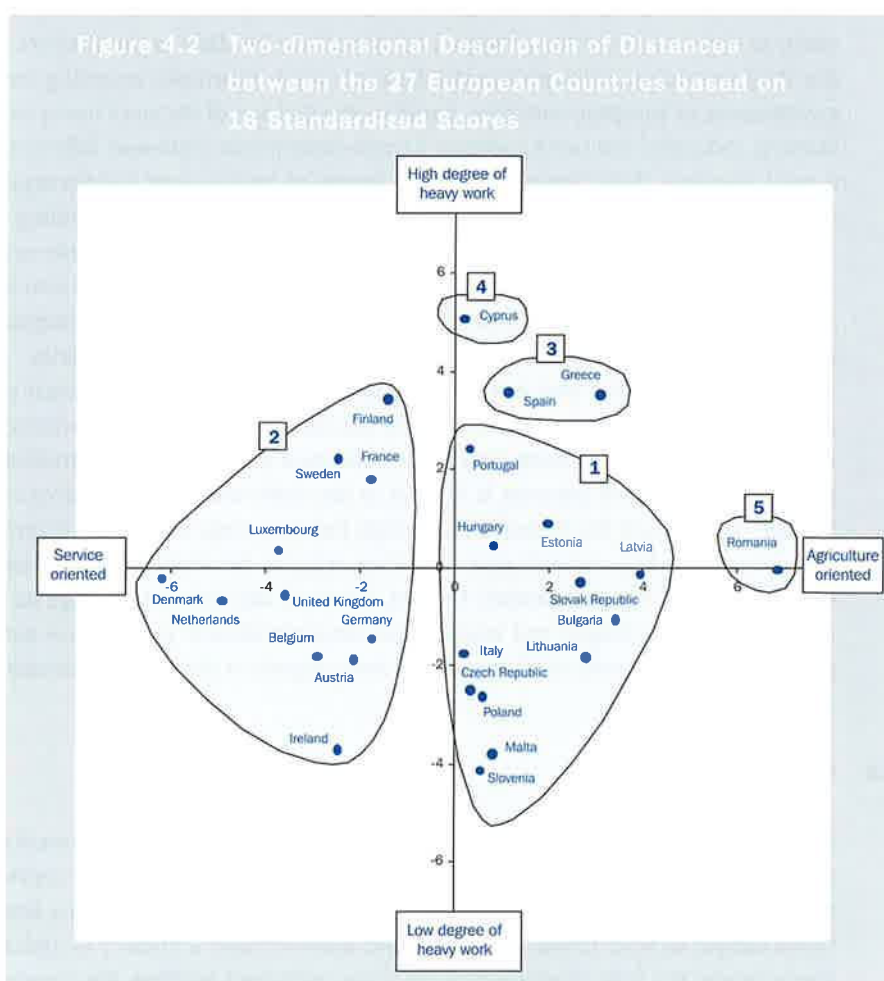
Clusters	Main cluster characteristics
Central Europe and Italy and Portugal	high on industry and agriculture long working weeks
Northern and western Europe	low on agriculture and high on commercial service short working weeks high on job complexity, job autonomy, and computer work low on physical job hazards
Greece and Spain	high on weekend work low on job complexity and job autonomy high on repetitive tasks, physical job hazards and heavy work high on work-related stress and fatigue
Cyprus	high on commercial service, low on industry high on work pressure, physical job hazards and heavy work high on work-related stress and fatigue
Romania	high on agriculture, low on commercial service long working weeks with weekend and shift work low on computer work and repetitive tasks high on work pressure

Using the sixteen standardized work indicators, the twenty-seven countries can be placed in a two-dimensional space (see Figure 4.2). This is done by introducing the Proximity Matrix produced by the cluster analysis and displaying the distances or proximity between the countries into Excel. The Solver Excel module made by Frontline Systems, Inc. is programmed to search for the coordinates of each country in such a way that the total residual distance is minimized.

In doing so, as much as possible of the total multi-dimensional distance between the objects (countries) is projected on a two-dimensional space and 66% of the total multi-dimensional distance can be represented or explained by the first two dimensions. The rest of the distances (34%) can only be explained by a third, fourth and so forth dimension.

Next, the two-dimensional figure is rotated in such a way that the extremes on the

left-right axis coincide with one of the sixteen indicators (rotation does not change the distances between the twenty-seven countries). In order of strength, the best fitting indicators for this horizontal axis are agricultural work, length of working week, service work (negatively), computer work (negatively), organizational size (negatively), complex work (negatively), exposure to job hazards, shift work, weekend work, and work-related stress and fatigue. Denmark and the Netherlands and Romania score the lowest and highest respectively on this horizontal axis. Figure 4.2 depicts the twenty-seven countries on the two axes.



The vertical axis can best be labelled the heavy work axis. The two work indicators repetitive tasks and work-related pains in the back, shoulders and limbs also coincide strongly with this second axis. Greece, Cyprus and Spain score highest and Malta, Slovenia and Ireland score lowest on this axis (see Figure 4.2). The five clusters identi-

fied in the cluster analysis are shown in Figure 4.2, which demonstrates that the differences or distances between the countries are rather gradual. For example, the cluster analysis includes Italy and Portugal in the central European cluster, although Italy is close to the northern-western cluster and the Portuguese work environment is close to that of Spain and Greece. Figure 4.2 also makes it clear that the industrial-agricultural work environments of Bulgaria, the Slovak Republic and the Baltic States resemble the work environment of Romania. It should also be noted that the distances within a cluster are sometimes larger than those between the clusters. In short, the graphic representation of differences between the countries in Figures 4.1 and 4.2 may make it easier to understand the real situation, but should not be taken as the absolute truth. Our third research question pertains to the north-south hypothesis regarding the work environment in European countries. Based on the division of the work forces over the farming, industrial and service sectors, a north-west versus south-east differentiation is very plausible. Only Cyprus with a high degree of service work and Portugal with a low level of service work do not fit into this differentiation. Long working hours and non-standard working hours are mainly found in the more agriculture-oriented central and southern European countries. Heavy work and job hazards are also mainly found in the new central and southern European countries. Complex, computerized and autonomous work is mainly found in the northern and western countries. But does this mean the best work environments are found in the northwest part of the European Union? It does not seem to be the case, especially since repetitive work is mainly found in the western countries where there is still ample industrialized and heavy work. And work pressure is highest in the older and richer countries such as Sweden, Finland and the Netherlands, though there are some exceptions (Cyprus and Malta score very high on work pressure). If we examine the health effects of the work environment, we see that Finland, Sweden, Denmark and France score high on work-related stress and fatigue and work-related musculo-skeletal pain. So we can only partly confirm the north-south hypothesis with respect to the work environments of countries.

4.4 Conclusion

Before summarizing the main results of this study, some of its strong and weak points should be noted. One strong point is that never before has such a large representative survey on the work environment in Europe been carried out among a representative sample of work forces. The study does however have a number of limitations. Conceptually, the lack of information on some important working life aspects such as pay, promotion, benefits and work security can be argued to be a weak aspect of the study. The survey mainly focuses on job contents, working conditions and working hours. It is not possible to check the validity of the work environment questionnaire, since there are no comparable objective data from observations or non-obtrusive sources. Nor is it possible to check whether the results of this study are biased

by cultural factors (work values, beliefs or opinions on the importance of work). However, the question on the economic sector has been checked using official objective Eurostat data that gives us confidence in the research data. Lastly, the country samples (1,500 workers for the older EU member states, 1,000 for the newcomers and 500 for Luxembourg, Cyprus and Malta) can be argued to be relatively small, so that one should consider the possibility of sample limitations in the results.

Riordan and Vandenberg (1994) argue that workers from various countries might use different conceptual frames of reference in responding to constructs such as organizational commitment, leadership style or job satisfaction. Simply translating a measurement instrument into another language is no guarantee of the same conceptual frame of reference as in the original country. We should be cautious in accepting the idea that measures truly operationalize constructs in the same way in different countries. No rigorous testing been conducted so far of the cultural independence of measurement instruments.

We summarize the main findings of our study as follows:

- Complex, computerized and autonomous work as well as repetitive work is mainly found in the western and northern European countries.
- Work pressure is also highest in the service-oriented northern and western European countries such as Sweden, Finland and the Netherlands, though the southern islands Cyprus and Malta also score very high on work pressure.
- Long working hours, non-standard working hours, heavy work and job hazards are mainly found in the new central and southern members as well, though they are also found in the old ones Greece and Spain.
- Work-related stress and fatigue and musculo-skeletal pains are more prevalent in the southern and central European countries, but countries like Finland, Sweden, Denmark and France also score relatively high on these health effects.

For policy reasons, it is important to add that our data indicates that work-related stress and fatigue are strongly related to work pressure, job hazards, heavy work, long working hours and non-standard working hours such as weekend and shift work. Our data also shows that work-related pains in the back, shoulders and limbs are strongly related to heavy work, job hazards, work pressure and the length of the working week. All of this means the new EU member states in particular should devote attention to reducing heavy work and job hazards (noise, vibrations, temperature, chemicals). In the older member states, reducing work pressure is the main way to keep health problems within acceptable limits. Lastly, the positive relation between long working hours and work-related health problems gives a new impulse to the European debate on the length of the working week.

To a certain extent, the analysis in this chapter supports the hypothesis of a north-south divide, or more precisely a north-west versus a south-east divide as regards the work environment in Europe. An interesting question is what causes this differentiation. Are the differences triggered by cultural differences or economic ones? Although

it would require a different analysis to answer this question, a clue might be found by correlating the sixteen work indicators in the analysis with the GDP per capita for each of the twenty-seven countries. The GDP per capita turns out to correlate positively with commercial service work, computer work, organizational size and job complexity, and negatively with the length of the working week, industrial work, agricultural work, job hazards, shift work and work-related stress and fatigue, leading to the conclusion that in the wealthier European countries, work is more complex, less hazardous, healthier and requires fewer working hours than work in the poorer countries. However, this does not exclude the possibility of cultural factors also explaining part of the difference between the quality of the work environments in the European countries.

4.5 Literature

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Chapter 5

Gender and Age Differences in Work and Health

Aukje Nauta

Summary

This chapter deals with the gender and age differences in work and health in the Netherlands. We present recent Dutch data in relation to three subjects: (1) employment status and employability, (2) working conditions and health risks at work, and (3) health and absenteeism.

Survey data shows that at the beginning of the twenty-first century, the position of women and older employees at work in the Netherlands lags behind the position of men and middle-aged employees. Women participate less or work fewer hours in paid work, have less challenging jobs and are absent more often from work, compared to men. Older employees show less mobility, suffer more frequently from chronic diseases and are absent more often from work, compared to middle-aged employees.

This knowledge is helpful in the development of policies aimed at achieving a more equal and just distribution of interesting and healthy work among men and women irrespective of age. However, the knowledge is not without drawbacks. It is clear, for example, that the elderly are less healthy than the young and that women spend more time doing household tasks than men which leaves them less time to pursue a career. Thus, employers may use the figures to exclude female and older people from attractive job opportunities. This is called 'statistical discrimination'. We will argue, however, that this type of discrimination is not a clever strategy for employers to use, because an individual curriculum vitae says so much more about a person's employability than merely his or her age and gender. We therefore promote an individual approach when trying to improve the balance between work demands and individual competences. We describe how this approach can contain three types of interventions: (1) combatting stereotypes concerning female and older employees; (2) adjusting work and working conditions to the capabilities of all employees, including women and older persons (design for all); and (3) improving the employability of all employees, including women and older members of staff (diversity management).

5.1 Introduction

Topics on gender and age differences regularly make the pages of the Dutch press; some examples are shown below in Box 5.1. These and other recent Dutch headlines demonstrate that the position of female and older employees is an important issue nowadays in the Netherlands. Both the Dutch government and our society are con-

cerned by issues of inequality and are searching for ways to provide equal opportunities to employees of different gender and age.

One way of striving for equal opportunities is by means of legislation. In May 2004, a new act on age equality in work and employment came into effect in the Netherlands. According to this law, any form of age discrimination at work is forbidden. Distinction on the basis of age is only permissible when there are good reasons for it. This act is part of a general act on equal treatment at work, which in turn is based on Article 1 of the Dutch Constitution. This article says that discrimination on any grounds is prohibited. No one may be treated unequally due to his or her religion, political convictions, race, gender, nationality, sexual orientation, marital status, disability or chronic illness, employment hours (full-time or part-time) or type of employment contract (permanent or temporary). These are known as the grounds of discrimination. 'Age' was added to the list of grounds in 2004. Unequal treatment based on these grounds of discrimination is prohibited in all kinds of employment, when offering goods and services and in educational and career counselling. The grounds 'employment hours' and 'type of employment contract' apply only in an employment setting (www.szw.nl).

Box 5.1 Examples of Dutch headlines regarding gender and age differences

'Women receive one-fifth less pay than men' (*De Volkskrant*, December 21, 2004)
'Older women who have a high school education earn 40% less than men with the same level of education'

'Women report ill much more often. Absent 12.6 days on average' (*De Telegraaf*, July 21, 2004)
'Heavy household tasks. Consulting doctors sooner. These are the reasons why women report ill 2.6 days more than men on average. Research by TNO among almost 18,000 employees rejects the idea that working conditions cause higher absentee levels'

'In the near future, employees who report ill as a result of RSI or mental health complaints are to be examined twice before they can receive a disability pension. A trial in Alkmaar in which young women are examined by two doctors instead of one is to be extended'

'Managers offer older employees very little training.' (*De Volkskrant*, November 11, 2004)
'You turn grey before you know it, say the experts. After fifteen years of working an employee's motivation starts to decline. Permanent training can help, but who's going to start providing it?'

'Forget about a lazy life after retiring.' (*De Volkskrant*, December 27, 2004)

'In order to stimulate employees to keep working till an older age, as desired by the government, employers will have to inspire and motivate their personnel for longer'

'The end is near for superannuation in the ambulance service. Periodic test for identifying health risks among employees' (*De Volkskrant*, August 31, 2004).

'It is expensive, against the law (discrimination on the basis of age is not allowed) and there are no medical reasons for it: the end is near for superannuation'

Despite acts on equal treatment, unequal opportunities for men and women remain an important issue in the Netherlands which is proving very difficult to remedy. The position of female employees, both older and very young, is unequal compared to 'white middle-aged men'. The government is trying to stimulate employees to remain in employment till a higher age, but both employers and employees are demonstrating resistance to their plans. Employees are accustomed to stopping work at around 60-61 years of age, and employers believe that they benefit because in this way their personnel stays young, flexible, employable and healthy.

At the end of this chapter solutions will be considered to unequal opportunities for women and older employees. Solutions can be headed under the term 'diversity management', which implies that employers ensure optimal and sustainable employability of all employees, taking into account all their differences as well as their similarities (De Vries et al., 2005). Of course, this refers not only to differences in gender and age, but also to differences in ethnic background and other characteristics. Diversity management, therefore, aims at providing equal opportunities to all employees by arranging work and employment relations in such a way, that both the employer's productivity goals and the individual needs of employees are met.

In this chapter we will focus on gender and age differences in three areas (1) employment status and employability, (2) working conditions and health risks at work, and (3) health and absence.

Most figures will be derived from the TNO Work Situation Surveys 2000 and 2002 (TAS; Smulders, 2001, 2003). The TAS is carried out every two years, and a survey among a representative sample of about 4000 members of the Dutch labour force each 'wave'. Furthermore, we chose to combine the surveys of 2000 and 2002 to enlarge the data set in order to improve the reliability of our results, thereby assuming that no large shifts in gender differences have taken place within a time lag of only two years. Thus, most percentages we will present are 2000-2002 means (based on about 8000 workers).

Many topics are dealt with in the TNO Work Situation survey, including work pressure, burnouts, physical work load, work characteristics, health at work etc. The TAS analyses, performed for this chapter, concern employees only, i.e. persons with fixed or temporary labour contracts. Freelancers and self-employed persons were excluded from the analyses. Where necessary, we supplement the TAS data with data from other sources.

Paragraph 5.2 to 5.4 present the results. After drawing conclusions (paragraph 5.5) on gender and age differences, the so-called threat of 'statistical discrimination' is presented, i.e. the tendency of employers to exclude female and older people from attractive job opportunities merely on the basis of sex and/or age (paragraph 5.7). In the last paragraph (5.8), interventions are described that either combat stereotypes about women and older people, or adjust the work situation to meet the needs of various employees, or, finally, increase the employability of all.

5.2 Gender and age differences in employment status and employability

In the Netherlands, significant differences exist in the labour participation of men and women of different ages.

In Chapter 1 of this book we already showed that 65% of the Dutch population was actually in employment in 2003. But the net labour participation (i.e., the employed labour force as a percentage of the population aged 15-64 years) of men is much higher than that of women (75% vs. 55%). Furthermore, labour participation was very low among 55+ employees. Only 39% of them were employed. In particular in the age group 55+ the labour participation of women was low: 24%. Based on the labour participation of younger women today, it can be expected that the participation figures of older women will increase in the future.

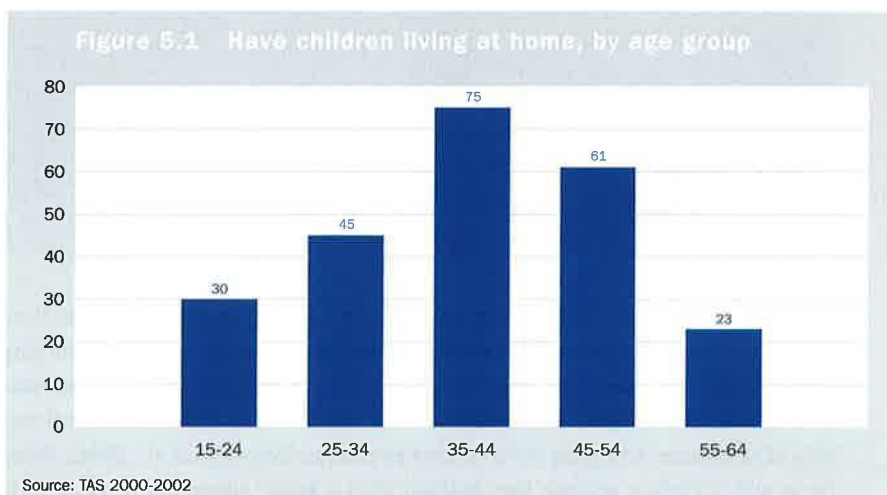
However, Portegijs, Boelens and Olsthoorn (2004) argue that the emancipation of women today is far from complete. The participation rate of women is growing less fast than the Ministry of Social Affairs and Employment targeted in their long-term policy plan for the years 2000-2010. In 2003, fifty-five percent of women were working, which is 1 percentage point below the target for that year. If the present rate of growth remains unchanged, the target of a participation rate of 65% by 2010 will not be attained.

Women increasingly work part-time. In 2003, one-third of women worked for 35 hours a week or more, compared with around 50% in 1990. Although men worked fulltime less often than before (from 90% in 1990 to 86% in 2003), the drop in their number of working hours is much less than among women. Couples prefer a mutual distribution of paid work that is called the 'one-and-a-half-earners' model, in which the man works around twice as many hours outside the home as the woman. Mothers often reduce their working hours after the birth of their first child. Fathers seldom do.

Portegijs et al. also have some good news concerning the emancipation of women. The difference in labour market participation that used to exist between women with children and women without had disappeared by 2003. Moreover, the participation rate of Dutch women is higher than in most other EU member states (with the exception of the Scandinavian countries). The unemployment rate is rising less fast among women than among men. Both men and women in the Netherlands are less often unemployed than in most other EU member states. Ten percent of the women who gave birth to a child in 2003 gave up work, compared with a quarter in 1997.

The TAS-200-2002-data reveal that working women are more often childless compared to working men: 55% of working women versus 42% of working men have no children living at home. On the other hand, it also implies that 45% of working women do have children living at home, which means that, in contrast to the recent past, having to care for children no longer means that all women stay at home instead of participating in paid labour.

Figure 5.1 shows that around age 40, in particular, employees have to combine work with caring for children. Three quarter of employees aged 35 - 44 have children living at home, compared to 30% of employees aged 15 - 24 and 23% of employees aged 55 - 64. This is a neglected advantage of the older employee group: their private life is less busy because their children have grown up. Older employees therefore have more time and energy left to spend on their work. This is especially true for older women who have either increased their part-time hours or have rejoined the labour force: they are able to redirect their focus from their children to their working life.



There appear to be strong gender differences regarding the main responsible person at home carrying out household work (e.g., cooking, shopping, cleaning) and care

tasks (for children or parents; Table 5.1). It appears that 75% of women, compared to 22% percent of men, say that they are mainly responsible for household work and care tasks. Single employees living on their own are included in this question. Nevertheless, these figures show that working women more often combine two responsibilities (paid work and household tasks) than men do. When asked how many hours a day employees spend doing household chores and care tasks, it appears that 29% of the women compared to 59% of the men say that they spent zero or one hour a day doing household work. In contrast, 41% of the women compared to 13% of the men say that they spent 3, 4 or more hours a day on household chores and care tasks. When looking at age and (hours of) household work and care tasks, there does not appear to be a strong link between age and the person mainly responsible for carrying out household work and care tasks, although 55+ employees state less often that they are mainly responsible for these tasks. However, there does appear to be a link between age and the average number of hours spent a day on household work and care tasks. As Table 5.1 also shows, fewer employees aged 55+ spend 3, 4 or more hours a day on household work and care tasks compared to employees aged 45 - 54 and aged 35 - 44. This would appear to support the finding above that older employees have more time left for paid work compared to middle-aged employees.

Table 5.1 Responsibility for and hours a day spent on household work and care tasks by employees of different sex and age groups

	Male	Female	15-24	25-34	35-44	45-54	55-64
Employee mainly responsible for household work and care tasks	22%	75%	46%	49%	43%	41%	35%
Number of hours a day spent on household work and care tasks:							
0-1 hours	59%	29%	63%	48%	36%	40%	49%
2 hours	29%	30%	29%	29%	29%	31%	29%
3-4 hours or more	13%	41%	8%	23%	34%	29%	22%

Source: TAS 2000-2002

Working women in the Netherlands today have a higher level of education than working men. Thirty-one percent of working women compared to 24% of working men have had further education. However, in the overall Dutch population the education level of men and women differs in the other direction: in 2002, 25% of all men and 19% of all women had gone on to further education (Portegijs et al., 2004). These figures would therefore suggest that women with a lower education level in particular, stay at home instead of having a paid job.

A relationship also exists between age and education level, with lower education

levels occurring at a higher age: 45% of employees aged 55+ have a low level of education, compared to only 20% of employees aged 25 - 34. This is a so-called cohort effect; when the employees aged 55 and up were young, it was much less common to go to college than it is nowadays. However, it also shows that during their working lives, the older employees of today have not taken or been given the opportunity to upgrade their education level, by following MBA courses, for example.

When comparing employment contracts, the figures show that female employees have worse contracts than male employees. More women than men have temporary contracts (13% vs. 9%), or work as a temporary employee or a stand-by employee (6% vs. 3%, see Table 5.2). Other statistical sources show that women work part-time more often than men. In 2003, 66% of working women compared to only 24% of working men worked less than 35 hours a week (CBS/Statistics Netherlands).

There is also a relationship between age and employment contracts (see also Table 5.2). A very large majority, 96%, of the 55+ employees has a permanent contract, compared to 85% of employees aged 25 - 34 and only 56% of employees younger than 25 years. At first glance, these figures suggest that older employees are privileged compared to the young. However, it may also suggest that many older employees find themselves in a 'golden cage'. It is likely that older employees do not dare to switch jobs because this may reduce both job and income security. Their employers, on the other hand, may sometimes believe that some of their older employees no longer match their job requirements, but may find it difficult to stimulate these employees to switch jobs or to even switch employers. This phenomenon may 'freeze' both employers and their workers, with an unnecessary decrease in employability as a result for employees and unnecessary stereotyping by employers of older employees who do not want to move. Research, however, is needed to examine the extent to which this phenomenon does indeed exist among older employees.

Table 5.2 *Employment contracts of employees by sex and age*

Type of employment contract	Male	Female	15-24	25-34	35-44	45-54	55-64
Permanent contract	89%	81%	56%	85%	92%	95%	96%
Temporary contract with prospect of a permanent contract	6%	7%	16%	9%	4%	2%	1%
Temporary contract (unlimited)	3%	6%	11%	4%	2%	2%	2%
Temp agency contract	1%	2%	6%	1%	1%	1%	1%
Stand-by (on call) contract	2%	4%	11%	1%	1%	1%	1%

Source: TAS 2000-2002

Employability of male and female workers that relates to the ability and willingness to fulfil possible future jobs is depicted in Table 5.3. As it can be assumed that behavi-

our in the past is a good predictor of behaviour in the future, employability for future jobs can be deduced from what people did with their career during the last two years. Have they experienced any training, promotion, job enlargement and do they perceive themselves as being broadly employable? The figures show that men generally have higher scores on employability than women. They have had both more internal and external training, their jobs have been enlarged more often and they have been promoted more often in the past two years. An exception is that both women and men have switched jobs just as often during the past two years, but this can be interpreted as a horizontal switch only. Last, but not least, men more often perceive themselves as being more broadly employable compared to their colleagues. Of course, this is a perception and does not have to mean that their actual, objective employability is higher compared to the employability of women. Nevertheless, it means that more men than women have confidence in their broad employability. We know from research that this confidence in one's own abilities, also called self-efficacy, is an important determinant of actual behaviour, for example, actively pursuing a career. Therefore, the gender difference as shown here in perceived employability may be one of the determinants why women don't often pass the so-called 'glass ceiling'. However, more in-depth analysis is needed (for example, monitoring job type, job level and education level) to find out whether perceived broad employability may indeed explain actual career behaviour and career success.

Table 5.3 Employability of different sex and age groups

	Male	Female	15-24	25-34	35-44	45-54	55-64
- Had in-company training in last 2 years	55%	55%	40%	57%	54%	53%	46%
- Had external training paid by the company in last 2 years	47%	47%	33%	47%	43%	42%	35%
- Switched job within the company in last 2 years	21%	21%	21%	25%	22%	16%	12%
- Job has been enlarged in last 2 years	47%	47%	41%	48%	45%	42%	30%
- Promoted within company in last 2 years	20%	20%	19%	24%	18%	11%	7%
- Perceived own employability as broader compared to colleagues	57%	57%	38%	55%	55%	50%	50%

Source: TAS 2000-2002

Table 5.3 also shows the degree of employability as a function of age. It is clearly shown that employability reaches its top level at the early age of around 30-35 years. When employees are 35 or older, they follow less internal and external training, switch jobs less often, their jobs are enlarged less often and they are promoted less often. Of the 55+ employees, only seven percent were promoted in the last 2 years, compared to 24% of employees aged 25 - 34. In contrast, the perception of being more broadly

employable compared to ones colleagues is more or less the same (50-55%) among employees of all ages, with the exception of employees younger than 25 years of age, of which only 38% feel that they are more broadly employable than their colleagues. This implies that at an older age, a gap exists between a person's perception of their employability and their actual career behaviour. There is no certain explanation for this gap; older employees, while perceiving themselves as broadly employable, may either feel comfortable in their current job, or feel that they are in a 'golden cage', or may no longer have been given training and career opportunities by their employer because of the stereotype that older employees are inflexible. Nevertheless, the gap at least illustrates that it is a myth that older employees feel less employable, and therefore it suggests that there are far more opportunities to use the competencies of older employees than are actually currently used.

5.3 Gender and age differences in working conditions and health risks at work

The job levels of men and women do not seem to differ that much, as Table 5.4 demonstrates. Both working men and women are 'normally distributed' over low and high level jobs, with somewhat more men in academic jobs compared to women (10% vs. 7%). Portegijs et al. (2004) present the same data somewhat differently. They show the proportion of women compared to all employees at different job levels. Overall, the proportion of women is 41% regardless of job level. This is more or less the same for elementary jobs, low level jobs, medium level jobs and high level jobs. Jobs at an academic level are an exception: in these jobs, the proportion of women is 33%. Furthermore, Portegijs et al. showed that the proportion of women in top managerial jobs was only 25% in 2002. The good news is that this proportion has increased compared to 1995, when only 14% of the managers in top managerial jobs were women. Table 5.4 furthermore shows that men and women work in different sectors. Many more men compared to women work in industry (31% vs. 9%), whereas many more women compared to men work in non-profit services (51% vs. 23%). Portegijs et al. (2004) show that in the sectors health care, education and culture, in particular women are overrepresented compared to men. In the health care sector, almost 80% of all employees is female. In all other sectors, more men than women are employed, with the construction sector at the top (over 90% of the employees are male).

Table 5.4 *Job levels and industrial sectors of employees in different sex and age groups*

	Male	Female	15-24	25-44	45-64
Job level					
Elementary jobs	7%	8%	14%	6%	6%
Low level jobs	23%	23%	40%	20%	22%
Medium level jobs	38%	41%	36%	41%	37%
High level jobs	22%	22%	9%	23%	24%
Academic jobs	10%	7%	1%	9%	11%
Sector					
Agriculture	4%	2%	3%	3%	3%
Industry	31%	9%	19%	22%	23%
Profit services	42%	39%	52%	43%	33%
Non-profit services	23%	51%	25%	33%	41%

Source: CBS/Statistics Netherlands 2002

Finally Table 5.4 shows the age differences in job level and employment sector. Not surprisingly, young employees (< 24 years of age) work much more often in elementary and low level jobs than middle-aged and older employees. More remarkable is that young people work relatively more often in profit services, whereas older people work more often in non-profit services.

Table 5.5 shows gender and age differences in the content of work as demonstrated by the TNO Work Situation Survey (TAS) data. It appears that the jobs of female employees provide fewer opportunities for them to develop themselves compared to the jobs of male employees. Sixty-nine percent of female employees, compared to 79% of male employees, say that their jobs often or always contain developmental elements like variation, creativity, learning new things and requiring professional skills. Moreover, men perform cognitively complex jobs more often than women. The table shows that 72% of the female employees, compared to 80% of the male employees, say that their jobs often or always contain elements such as intensive thinking, having to remember lots of information over long periods of time and having to pay attention a lot. Table 5.5 furthermore shows that task autonomy is more or less equal for male and female employees. The large majority (around 70%) of both men and women say that their jobs often or always contain elements such as deciding themselves how to do the job, in which order to perform the tasks and choosing their own working style. Work pressure is also more or less the same for men and women. Over 40% of both men and women say that their jobs often or always demand that they have to work very fast, that they have to carry out a large amount of work and that they sometimes or never have enough time to finish their work. Finally, men more often use ICT products such as a cellular phone, fax, internet and e-mail compared to women (33% vs. 26%).

Nevertheless, more women than men spend long hours working behind a (computer) screen: 28% of the men compared to 34% of the women spend 4-8 hours a day behind a screen.

Table 5.5 Job characteristics of employees in different sex and age groups

Job often or always contains elements such as:	Male	Female	15-24	25-34	35-44	45-54	55-64
Developmental opportunities	79%	69%	58%	76%	79%	76%	75%
Job complexity	80%	72%	60%	77%	81%	79%	79%
Job autonomy	73%	70%	54%	75%	76%	73%	75%
Work pressure	45%	44%	32%	43%	47%	52%	48%
Use of ICT (cell phone, fax, internet, e-mail)	33%	26%	23%	38%	32%	25%	20%
Number of hours a day working behind a (computer) screen:							
0 hours	37%	36%	48%	29%	33%	39%	47%
1-4 hours	35%	30%	26%	31%	37%	35%	33%
4-8 hours	28%	34%	27%	40%	20%	26%	20%

Source: TAS 2000-2002

Table 5.5 shows job characteristics of employees of various ages, and illustrates that the young (15 - 24) differ sharply from employees of all other ages. Young employees less often have development opportunities in their jobs, their jobs are less cognitively complex, task autonomy is lower but work pressure is also lower. Remarkably, the jobs held by 55+ employees do not differ from middle-aged employees with regard to development opportunities, cognitive complexity, task autonomy and work pressure. Thus, older employees have just as interesting jobs with equal work pressure compared to their younger colleagues, with the exception of the very young who fulfil interesting jobs less often. An exception is the use of ICT: of the 55+ employees, 20% uses ICT products such as a cellular phone, fax, internet and e-mail often to always in their jobs, compared to 38% of the employees of age 25 - 34. However, very young employees use ICT as seldom as older employees: 23% of the employees below the age of 25 say that they use ICT often to always in their job. An explanation of this finding is that very young employees more often carry out simple, low-level jobs; apart from this, there seems to be a cohort effect, in that employees aged between 25 - 34 have grown up with ICT and are more likely to use it at work as well, compared to older employees who learned to use ICT at an older age. Older people appeared to spend fewer hours a day behind a (computer) screen compared to younger people: 20% of the 55+ employees compared to 40% of the employees aged 25 - 34 work 4-8 hours a day behind a screen.

Table 5.6 shows some gender and age differences in physically heavy work. We asked employees how many hours a day they had to perform physical activities like moving heavy objects (> 5 kilograms), physical exertion with arms or hands and making repetitive movements with arms or hands (not in front of a computer screen). On average, many male (40%) and female employees (47%) never have to do this type of physically demanding work. However, male employees have to perform 2-8 hours a day of physically demanding work more often than female employees (30% vs. 16%). Female employees, therefore, are at an advantage with regard to this type of physically heavy work. Not only does it put a dynamical physical load on employees and increases the likelihood of developing physical complaints but it also very often concerns jobs offering little development and career opportunities, unless employees are able to combine it with either training or performing other tasks that offer more development opportunities. With regard to the more static physical demands, i.e. working in the same posture continually and working while sitting down, there are no substantial differences in gender. Men work as often as women at least half of a working day in the same physical position: 38% vs. 40%. Also, there are as many men as women who never work while sitting down (24% vs. 25%), and as many men and women who work 4-8 hours a day while sitting down (46% vs. 45%).

Male employees perform work more often under difficult conditions, such as noise, danger, solvents and smoke or exhaust fumes : 17% of the male employees and 3% of the female employees say that they work under these conditions once a week to almost every day.

Table 5.6 Physical job characteristics of employees in different sex and age groups

Job often or always contains elements such as:	Male	Female	15-24	25-34	35-44	45-54	55-64
Hours a day spent on physically heavy work (moving heavy objects, physical exertion, making repetitive movements with arms/hands)							
0 hours	40%	47%	37%	46%	42%	43%	40%
1-2 hours	31%	37%	37%	31%	35%	31%	35%
2-8 hours	30%	16%	27%	22%	23%	25%	25%
Hours a day spent working in the same posture							
0 hours	22%	26%	34%	19%	21%	25%	22%
1-2 hours	21%	18%	19%	18%	21%	20%	21%
2-4 hours	20%	16%	17%	17%	20%	19%	20%
4-8 hours	38%	40%	31%	46%	38%	37%	38%
Hours a day spent working while sitting							
0 hours	24%	25%	34%	19%	21%	28%	28%
1-2 hours	16%	19%	24%	15%	19%	15%	14%
2-4 hours	14%	12%	10%	13%	14%	13%	18%
4-8 hours	46%	45%	32%	53%	46%	44%	41%
Frequency of working under hard conditions (noise, danger, solvents and smoke or exhaust fumes):							
seldom or never	52%	78%	61%	64%	61%	64%	64%
once a month	32%	20%	29%	26%	27%	26%	27%
once a week to (almost) every day	17%	3%	10%	10%	12%	10%	9%

Source: TAS 2000-2002

Table 5.6 shows that older employees on the whole perform physically heavy work just as often as younger employees. Around a quarter of employees of all ages perform work that places a dynamical physical workload on them (called physically heavy work). Relatively as many employees (around 38%) aged between 55 - 64 as compared to employees aged between 45 - 54 and aged between 35 - 44 work 4-8 hours day in the same posture (static workload). Differences are found between the two younger age categories: employees aged between 25 - 34 work 4-8 hours a day in the same posture more often compared to employees aged 15 - 24 (46% vs. 31%). Also, of all age categories employees aged between 25 - 34 work most often while sitting down for 4-8 hours a day: 53%.

Around ten percent of employees of all ages are confronted with conditions like noise, danger, solvents and smoke or exhaust fumes each week or even every day. These fin-

dings are surprising; it would have been more likely that older employees, as a result of experiencing physical health problems, would have jobs that contain physically hard work less often. This finding could be explained by the 'healthy worker survivor effect' (Arrighi & Hertz-Picciotto, 1994; Nauta, De Bruin, & Cremer, 2004): Labour participation is generally low among 55+ employees; those who still work are relatively healthy and can cope with physical demands. An alternative explanation may be related to the fact that reported physical job characteristics were measured instead of those actually observed. It may well be the case that although actual physical conditions are harder on average for younger than for older employees, older employees report equally heavy workloads as compared to younger employees. Past research has shown that as people grow older, their capacity to deal with physically heavy work declines (e.g. Åstrand & Rodahl, 1986). Therefore, they will report equally heavy workloads when physical job demands have actually declined (or a higher level of physical workload when the physical job demands have actually remained the same). Regardless of which interpretation is the more correct, the findings suggest room for new a policy, namely one aimed at giving older employees more opportunities to switch from physically hard work under difficult conditions to work that is less physically demanding and dangerous and that they will also actually experience as such.

5.4 Gender and age differences in health, absenteeism and disability

Statistics Netherlands (CBS in Dutch) introduced the National Statistical System on Sickness Absence in 2004, in which reliable and objective data from various sources (health and safety executives, the social security agency, etc.) is combined (CBS Press release, September 2004). These statistics show that Dutch employees were absent 4.7% of the total number of available days in 2003. This is a decrease as compared to 2002, when sickness absence was 5.3%. Furthermore, as Table 5.7 shows, it appears that women employees were absent more often than men: 5.3% vs. 4.3%. Absenteeism is higher among older employees. Whereas employees aged 15 - 25 were absent 2.6% of the time, employees aged 45 and up were absent 5.5% of the time. It is important to note, however, that the higher sickness absence percentage of older employees is due entirely to the longer duration of their absence. Older employees report ill less frequently than younger employees, but if they report ill, their absence lasts longer.

Table 5.7 Absence of employees in different sex and age groups (2003)

	Sickness absence (%)	Absence frequency per person per year	Duration of sickness absence per period
Total	4.7	1.32	14.7
Gender			
Male	4.3	1.13	14.0
Female	5.3	1.59	15.4
Age			
15-25	2.6	1.09	9.9
25-35	4.8	1.50	12.8
35-45	5.0	1.42	14.8
45-55	5.5	1.30	17.6
55-65	5.5	1.03	21.8

Source: CBS/Statistics Netherlands

Table 5.8 shows gender differences in exhaustion and its positive counterpart: work engagement. Also, gender differences in subjective health, work-related physical complaints and feeling restricted from working due to chronic illness are shown. More than half of both male and female employees often to always feel engaged by their work, meaning that they are enthusiastic about their work, that time flies while working and that they feel happy when thinking intensively about their work. Men and women also report that they feel equal levels of exhaustion due to work. Five percent of both male and female employees feel exhausted a few times a week or even daily. Almost a quarter of both men and women never feel exhausted. Also, no gender differences in subjective health are revealed. Around 35% of both men and women label their own health as very good to excellent. 13% of the female employees and 10% of the male employees label their own health as mediocre to bad.

Table 5.8 Work-related health of employees of different sex and age groups

	Male	Female	15-24	25-34	35-44	45-54	55-64
Feeling engaged in work:							
almost never - now and then	13%	15%	29%	15%	10%	8%	8%
often - always	52%	52%	30%	50%	56%	62%	61%
Feeling exhausted :							
never	22%	24%	27%	20%	22%	22%	27%
a few times a week - daily	5%	5%	3%	4%	5%	7%	7%
Subjective health:							
mediocre - bad	10%	13%	8%	8%	10%	17%	18%
very good - excellent	37%	35%	43%	41%	36%	27%	29%
Suffering from at least one chronic disease	55%	62%	45%	50%	61%	71%	73%
When having a chronic disease:							
feeling no restriction in performing job	46%	43%	44%	49%	45%	40%	46%
feeling strongly restricted performing job	10%	8%	5%	7%	10%	11%	9%
Neck pain in the past 12 months:							
never	54%	37%	50%	48%	47%	43%	47%
once, short or long	32%	35%	33%	33%	33%	33%	31%
several times, short or long	14%	27%	16%	19%	19%	23%	22%
Shoulder pain in the past 12 months:							
never	52%	40%	50%	51%	47%	41%	47%
once, short or long	33%	32%	33%	31%	34%	35%	30%
several times, short or long	15%	27%	17%	19%	20%	24%	23%
Pain in wrists/hands in the past 12 months:							
never	66%	62%	59%	66%	69%	61%	62%
once, short or long	24%	25%	30%	25%	21%	26%	23%
several times, short or long	10%	13%	11%	10%	10%	14%	15%

Source: TAS 2000-2002

Women suffer more often than men from one or more chronic diseases (62% vs. 55%; including back pain). When asked whether employees with chronic diseases felt restricted from performing their job, no large differences appeared between men and women. Forty-six percent of the men and 43% of the women felt no restrictions at all in performing their job. Musculoskeletal health problems are more frequent among women than among men. Men report more often than women that they have never suffered from pain in their neck, shoulders, or wrists /hands. More than a quarter of the women, compared to around 15% of the men, reported that they had suffered from neck or shoulder pain several times in the past two months.

With regard to age and health, the data firstly shows that twice as many 55+ employ-

ees feel engaged as compared to employees age 15 - 24 (61% vs. 30%). Feelings of regular exhaustion increase only very slowly with age, and the percentage of employees who never feel exhausted is even larger among 55+ employees compared to employees aged 25-54. This latter effect demonstrates the 'healthy worker survivor effect': those employees who still work around their sixties are the healthy ones. Nevertheless, more 55+ employees compared to those aged 35 and younger feel that their state of health is mediocre or bad (18% vs. 8%). Likewise, 55+ employees suffer more often from at least one chronic disease (73%), compared to employees aged 25 - 34 (50%) and those aged 15 - 24 (45%). However, when asked whether employees felt restricted by their chronic disease in performing their job, percentages of employees who felt strongly obstructed are low across all ages (5-11%). Musculoskeletal health problems show no strong links to age. Half or less of the employees have never suffered from neck or shoulder pain in the past twelve months, and even more have never suffered from pain in their wrists or hands during the same period. Only slightly more employees aged 45 - 64, compared to those aged 15 - 44, have suffered several times from pain in neck, shoulders or wrists/hands during the past year.

5.5 Conclusions

5.5.1 Gender differences

To summarize, the facts and figures demonstrate the following with regard to gender differences in the Netherlands:

- More men than women have a paid job and more men than women work full-time
- Women take more responsibility for, and spend more time performing household work and care tasks
- Working women have had higher education more often than working men; considering the total Dutch population, men have had higher education more often than women. This means that lower-educated women in particular stay at home instead of having a paid job
- Women have permanent contracts less often than men
- Men appear to be more employable than women, having received more training, job enlargement and promotion. They also rate themselves more often than women as being more broadly employable compared to their colleagues
- Both working men and women are 'normally distributed' over low and high level jobs, although women are still underrepresented in academic and top managerial jobs compared to men
- More men than women work in the industrial sector, more women than men work in the non-profit sector
- Women work in less challenging jobs than men
- Men perform more physically demanding work under dangerous conditions compared to women
- There are no gender differences in static physical work load

- Female employees are absent more often than men
- Over half of both male and female employees feel often to always engaged by their work, only five percent feel exhausted very frequently
- Musculoskeletal health problems are more frequent among women than among men.

5.5.2 Age differences

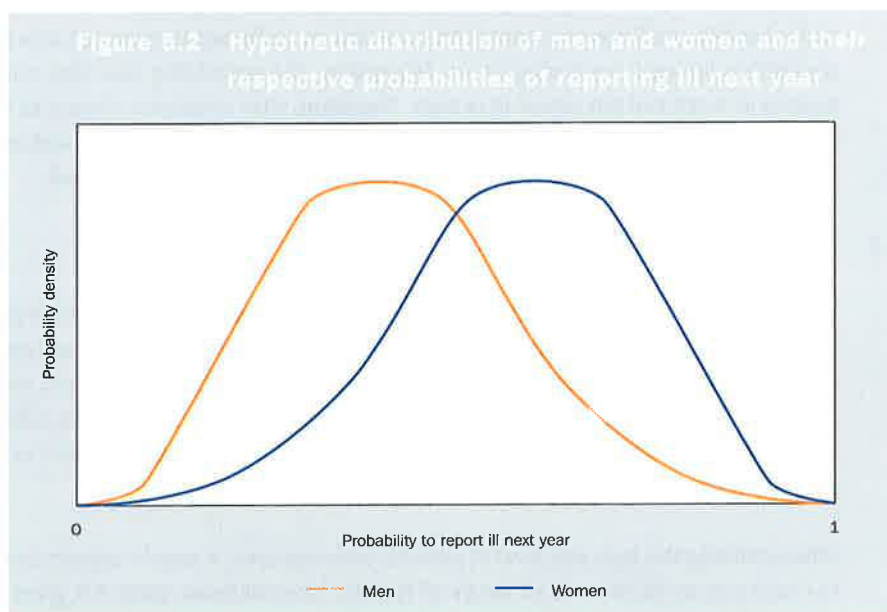
The following differences were found with regard to age in the Netherlands:

- 55+ employees have children living at home less often compared to middle-aged employees, and spend less time each day on household work and care tasks. They therefore should have more time available for their job, unless they spend it on other activities (grandchildren, for example)
- 45% of the 55+ employees have a low level of education, compared to only 20% of the employees aged 25-34. This finding suggests that older employees started their career at a lower education level than their younger colleagues; it also suggests that the older employees have not taken or been given the opportunity to upgrade their education level during their working lives
- Almost all 55+ employees have a permanent contract
- Employability reaches its highest level at the early age of around thirty years. Employees above the age of 35 receive less training, switch jobs less often, have their jobs enlarged less often and are promoted less often. In contrast, a person's perception of being more broadly employable compared to colleagues is more or less the same among employees of all ages
- Employees under the age of 25 work much more often in elementary and low level jobs than middle-aged and older employees. More remarkable is that young people work relatively more in the profit sector, whereas older people work more in the non-profit sector
- Older employees have just as interesting jobs with equal work pressure compared to their younger colleagues
- Older employees perform physically heavy work under dangerous conditions just as often as younger employees
- Older employees report ill less frequently, but are off sick for longer periods
- Employees aged 55+ feel twice as often engaged in their work compared to employees under the age of 25
- More 55+ employees compared to employees younger than 35 feel that their health is mediocre or bad and suffer from at least one chronic disease, but they don't feel more strongly restricted by their chronic disease in performing their job
- Musculoskeletal health problems are only slightly positively related to age.

5.6 'Statistical discrimination'

TAS and other data shows that at the beginning of the twenty-first century, the posi-

tion of women and older employees at work in the Netherlands lags behind the position of men and middle-aged employees. Women participate less or work fewer hours in paid work, have less challenging jobs and are absent more often from work, compared to men. Older employees show less mobility, suffer more frequently from chronic diseases and are absent more often from work, compared to middle-aged employees. Describing and interpreting these gender and age differences is helpful in the development of policies aimed at achieving a more equal and just distribution of interesting and healthy work among men and women irrespective of age. However, this process is not without drawbacks. When concluding that women participate less or work fewer hours in paid work than men and that older people are less healthy than the young, employers may use these figures to exclude females and older people from attractive job opportunities. This is called ‘statistical discrimination’, or discrimination on the basis of group characteristics that in themselves have only very little to do with the required competencies (Baron & Kreps, 1999).



Suppose an employer wishes to select employees who have a low risk level with regard to absenteeism. Suppose that this employer is also aware of the distribution of probability of reporting ill of both women and men, which may be similar to Figure 5.2. The employer will rationally discriminate in favour of men because, on average, they have a lower probability of reporting ill than women. In this way, the employer maximizes the probability that the employee will not report ill, although he or she may even admit that there are many women that have a lower probability of reporting ill than men, which can be deduced from Figure 5.2.

Moreover, people are far from perfect in processing information and are likely to be cognitively biased. Therefore, it is likely that people perceive larger differences between categories of people than actually exist. For example, when a woman who works with a large number of men reports ill, this may attract more attention than when a male colleague reports ill. This may reinforce the opinion initially held that women report ill more frequently.

However, 'statistical discrimination' is not a clever strategy for employers to use. Ideally, employers have much more information about their employees than merely their sex and age. Although these demographic variables show some relationships with regard to employability and health, these relationships are very weak. A study on the health and employability of older employees, Nauta, De Bruin and Cremer (2004), showed that there are other variables that explain much more variance in employability and health than age. These are, among others, life style, job type and tenure: when people exercise frequently and eat healthily, when they perform a healthy job under healthy conditions without physical overload and when they switch jobs before the current job gets too boring or too demanding, the probability that they will stay healthy at work and not report ill is high. Therefore, wise employers choose to invest in their employees to prevent absence and to increase their performance and level of engagement. The following, concluding section goes into this in more detail.

5.7 Recommendations

To conclude this chapter on gender and age differences, some possible interventions are described that (Dutch) society (including the government), employers and employees can take to stimulate equal opportunities for men and women of all ages. As Table 5.9 shows, three types of interventions are possible: combating stereotypes, adjusting work and increasing employability. Moreover, interventions can take place at three different levels: society level, organisation level and individual level.

When crossing the type and level of possible interventions, a matrix appears in which the cells can be filled with all kinds of specific interventions. Table 5.9 gives some examples. In order to combat stereotypes, the government could start public campaigns that convince people that many female and older employees are more employable and healthy than stereotypes would suggest. Firms could choose to let women and older people (and ethnic minorities as well!) appear in organizational magazines or other internal media (speeches, intranet, etc.) to subtly convey the message that people of diverse backgrounds are valuable employees at all levels. Employees also have their own responsibility in combating what might be called 'self-stereotyping'. Instead of perceiving oneself as 'somebody who just works a couple of hours in order to earn some extra money' (women) or 'somebody who will work a couple of years more and then retire early' (older people), employees may want to broaden their self

image. Wrzesniewski and Dutton (2001) wrote that employees craft their own job and job environment. For example, a hair dresser may view herself as someone who just dresses hair or as someone who cares for people, having small talk or even very personal conversations with clients. So too, will female and older employees in all kinds and at all levels of jobs create their own job and job attitude: they may perceive it as 'just a job' and perform likewise, or they may craft an interesting job in which they create possibilities to pursue a career, 'even though' they are female or approaching the age of 60. Of course, the employer must create enough 'room' for employees to craft their own job, and managers can play an important role in this. By means of regular formal and informal dialogue, for example, in which managers ask their employees what they want and really listen to their answers. They will then create an environment in which employees actually develop their individual ambitions (of course within the constraints of creating value for the organization as well) instead of following well-tread stereotypic paths.

Table 5.9 Examples of interventions to stimulate equal opportunities for men and women of all ages

	Society level	Organisation level	Individual level
Combating stereotypes	Public campaigns on women and older people at work	Women and older people in personnel magazines	Combating self-stereotyping
Adjusting work	Stimulating 'course of life arrangements'	Design for all	Adjusting one's own work
Increasing employability	Fiscally stimulating labour market participation	Diversity management	Training in coping behaviour

The second type of intervention is to adjust work in such individually customized ways, that all employees whether female or male, old or young are suited to it, are able to perform well while remaining healthy at work. At the level of society this may for example involve stimulating 'course of life arrangements' (fiscal incentives), in which people can save money for sabbaticals, periods of part-time work or early retirement, according to what their individual needs are. In 2004 heated debates about 'course of life arrangements' took place between the Dutch government and labour unions. Finally, they agreed upon an arrangement which came into effect in January 2006. Its goal is to enable employees to combine work with their private life. Employees can save a maximum of twelve percent of their gross income each year that can be used to take leave or retire early (www.szw.nl).

At an organization level, employers could design jobs and the working environment in such a way, that it is suited to anyone: 'design for all'. Design for all is defined as an ongoing consideration during the design process of material environments and equipment to prevent potential users from being excluded and to increase comfortable use taking into account different ages, gender, physical (dis)abilities and ethnic background and assuming a broad variation in user situations (Koningsveld, Bronkhorst, & Schoenmaker, 2003; www.design-for-all.org). Examples of design for all products are: easily adjustable office chairs, calculators with big keys and displays and bed carriers to ease the work of nurses. At an individual level, employees must use or even increase the opportunities to adjust their own work and work environment to their own personal needs. Regrettably, employees do not always use all the possibilities that many office chairs nowadays offer to fit the chair perfectly to their own posture. This is just one example to demonstrate that employees can be responsible themselves for staying healthy at work.

The final type of intervention is to increase the employability of employees with different backgrounds. Governments can do so by fiscal incentives to stimulate the labour participation of all, including groups that are now weakly represented on the work floor. Individuals again have a personal responsibility to increase their own employability, for example by following training if necessary or by looking for jobs that fit and even broaden their competencies. Effects can also be expected from so-called 'diversity management', which means that employers ensure the optimal and sustainable employability of all employees, taking into account all their differences as well as their similarities (De Vries et al., 2005). Of course, this refers not only to differences in gender and age, but also to differences in ethnic background and other characteristics. Therefore, diversity management aims at giving all employees equal opportunities by designing work and employment relations in such a way that both the productivity goals of employers and the individual needs of employees are met. Diversity management takes into account that individual employees have different needs, competencies and attitudes but nevertheless all deserve to have equal opportunities in arranging their work situation according to their own individual needs. Examples of diversity management are:

- Employee benefits à la carte, in which different individual needs are met, including flexible working hours, care leave, etc.
- Making selection, promotion and downsizing 'diversity-proof'. Employers examine gender, age and race differences with regard to selection, promotion and downsizing as well as possible causes for differences revealed. Next, they examine whether adjustments are necessary and possible in such a way that all (potential) employees may benefit.

To conclude, we have demonstrated in this chapter that both male and female employees and young and old employees differ with regard to employment status, employ-

ability, working conditions, health risks at work, health and absenteeism. On average, male employees aged between 35 and 44 years work under the best conditions. However, much can and is being done in the Netherlands to stimulate equal opportunities, such as combating stereotypes by means of public campaigns, adjusting work by 'designing for all' and increasing employability by implementing diversity management. The problem at the moment is that it is not yet known whether these and other interventions to stimulate equal opportunities actually work. To remedy this, the Ministry of Social Affairs and Employment in the Netherlands performed an extensive evaluation of a large project that was carried out between 2002 and 2004. This project, called 'Mixed – towards a better male/female balance at work', aimed at reducing unequal opportunities for men and women. Many instruments were implemented in around thirty Dutch organizations. Examples of them are coaching and mentoring of employees in order to break through the so-called 'glass ceiling' and carrying out a culture diagnosis to analyze and change behaviour patterns in order to stimulate the careers of women. In 2005, these and other instruments implemented in Dutch organizations were evaluated with regard to their effect on the careers of women. Such large-scale evaluations, which are ideally a mix of a quantitative and a qualitative approach, are worth following in and outside the Netherlands in order to learn about what is really effective in stimulating equal opportunities for everybody.

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Chapter 6

Working hours and overtime

Anja Kremer

Summary

This chapter describes the working week of Dutch employees (the contractual working hours, overtime hours and hours worked in total). For this, we used data from the First Netherlands Survey on Working Conditions, conducted in 2003 among 10,075 employees.

Results confirm the generally known pattern in the Netherlands that the majority of women contractually work part-time (71% work less than 36 hours) with a mean number of hours of 26.5, while the majority of men work full-time (84%) with a mean number of hours of 36.6. This gender difference is present in all age categories, education levels, family situations and types of employment contract. The mean number of hours contractually worked by all workers is 32.3 hours per week.

Data supports the Dutch characteristic that after having children, many women stop working and that those who continue working, work fewer hours.

Irrespective of the contractual working week, at least two thirds of the employees work overtime (paid and unpaid together), both men and women. The mean number of overtime hours for all employees is 3.7. This is 4.6 hours for men and 2.5 for women.

As a result, the average employee works 36.1 hours in total, overtime included. For men this is 41.2 hours and for women 29.0. Three percent of the women and 13% of the men work more than 48 hours in total, which is more than was legally allowed in the Netherlands in 2003.

With respect to weekly hours worked in total, large differences exist across employment sectors and occupational job categories. Employment sectors where employees most frequently have full-time jobs (with a contractual working week of at least 36 hours) are: manufacturing, construction, sale & repair of motor vehicles, road transport, computer and related activities, and electricity, gas and water supply. Employment sectors where half of the employees or more contractually work part-time (less than 36 hours), are: department stores & supermarkets, education, health care & social work, other services, and hotels and restaurants.

Overtime is most common in the road transport, the oil & chemical industry, primary education, agriculture, and in hotels and restaurants. In the road transport sector the average employee works 48 hours a week. The data reveals that 47% of the employees working in this sector work more than 48 hours in total. Thus, almost half of the employees working in the road transport sector work more hours than was allowed by the Dutch working hour regulations in 2003.

6.1 Aim of this chapter

This chapter deals with the working time of Dutch employees, with special attention to contractual working hours, overtime hours and hours worked in total. For the description of working time, data from the Netherlands Survey on Working Conditions (in Dutch NEA; Van den Bossche & Smulders, 2004), conducted in 2003, is used.

The aim of this chapter is to gain more insight into:

1. the contractual working time of the Dutch employee, and the influence of sociodemographic characteristics such as gender, age, education and family situation, and employment contract on it
2. overtime working: what proportion of the Dutch employees does work overtime, how many hours do they overwork and what is the influence of sociodemographic characteristics on it
3. weekly hours worked in total: what proportion of Dutch employees has long working weeks and what is the influence of sociodemographic characteristics on the weekly hours worked in total
4. working time across employment sectors and occupational job categories.

6.2 Relevance of the theme

Recently, working time has been a hot issue in Dutch politics. Some headline's from national newspapers state the following:

- According to the International Monetary Fund (IMF), Europe should work longer for the preservation of our welfare (NRC Handelsblad, 4 August 2004).
- Dutch Minister of Economic Affairs advocates extending the working week by 2 hours for all European workers (NRC Handelsblad, 7 October 2004).
- The government expects a lot from the heads of the family – active employment of both parents, taking care of children, parents and ailing members of the family. According to the Dutch Family Council, a firm Dutch family policy is lacking to make all these expectations feasible. Longer working hours are detrimental to family life. Instead, the government should focus more on the potential of highly educated women who take care of their children on their own (NRC Handelsblad, 13 October 2004).
- According to the Confederation of Netherlands Industry and Employers (VNO-NCV) the policy of the government should be aimed at an active employment of the total work force Labour productivity should be stimulated by making the 40-hour working week standard and labour participation beyond the age of 65 (NRC Handelsblad 5 July 2004).

6.3 Legislation

A strong traditional family ethos characterises the Netherlands. Up until the late 1950s, legislation prescribed that married women were not obliged to work outside of

the home (European Foundation, 2000; European Foundation, 2003). In the 1970s, this provision was still very much alive culturally, materialising in ideas about the importance of mothers staying home with their children. Labour market participation on the part of married Dutch women only began to rise in 1975, but the growth was swift and intense and has since more than doubled, reaching the average European level of participation in 1995 (see chapter 1 and 5 of this book). The introduction of facilities such as childcare lagged behind these developments, contributing to the high proportion of part-time female employees in the Dutch workforce. The government hopes to turn lost ground into a major leap forward with the 'combined scenario' of men and women sharing both work and care. Part-time employment must be viewed as a positive choice instead of an emergency remedy by both men and women. The Part-time Employment Act is designed to facilitate this process (see also chapter 2).

The Netherlands Survey of Working Conditions defines overtime hours as those worked above a the number of contractual hours worked, paid or unpaid. In Europe, within national regulations on the issue, overtime is expressed in a variety of ways and with many exceptions. The starting point for distinguishing sets of national rules from each other is the type of threshold used (daily, weekly etc), either in legislative or collectively agreed terms, and its relationship to contractual working time.

Overtime regimes are now changing rapidly. They are an essential instrument for obtaining the flexibility actively sought by businesses, a trend which the Netherlands is also not immune to.

Two EU Directives are of direct significance to the regulation of overtime - the 1993 Directive (93/104/EC) on certain aspects of the organisation of working time and the 1997 Directive on part-time work(97/81/EC). The part-time work Directive defines a 'part-time worker' as an employee whose hours of work, calculated on a weekly basis or on average over a period of employment of up to one year, are less than the hours of work of a comparable full-time worker. For more information on the legislation on working time, see chapter 2.

6.4 Trend in working time in the Netherlands and the 15 EU member countries

In the 1980s and 1990s in the Netherlands, as in many EU-countries, a primary focus of collective bargaining over working hours, were various schemes that traded shorter hours for increased flexibility. The context was set by the slowing economic growth, rising unemployment, economic globalisation and the intensification of competition associated with new forms of productive organisation.

In recent years the policy agenda has changed somewhat. There have been calls for greater flexibility to suit the needs of workers as well as employers - particularly 'family-friendly' arrangements, reflecting the increasingly significant participation of women in the labour force. The quality of working life has begun to assume greater

importance for the political and industrial relations actors.

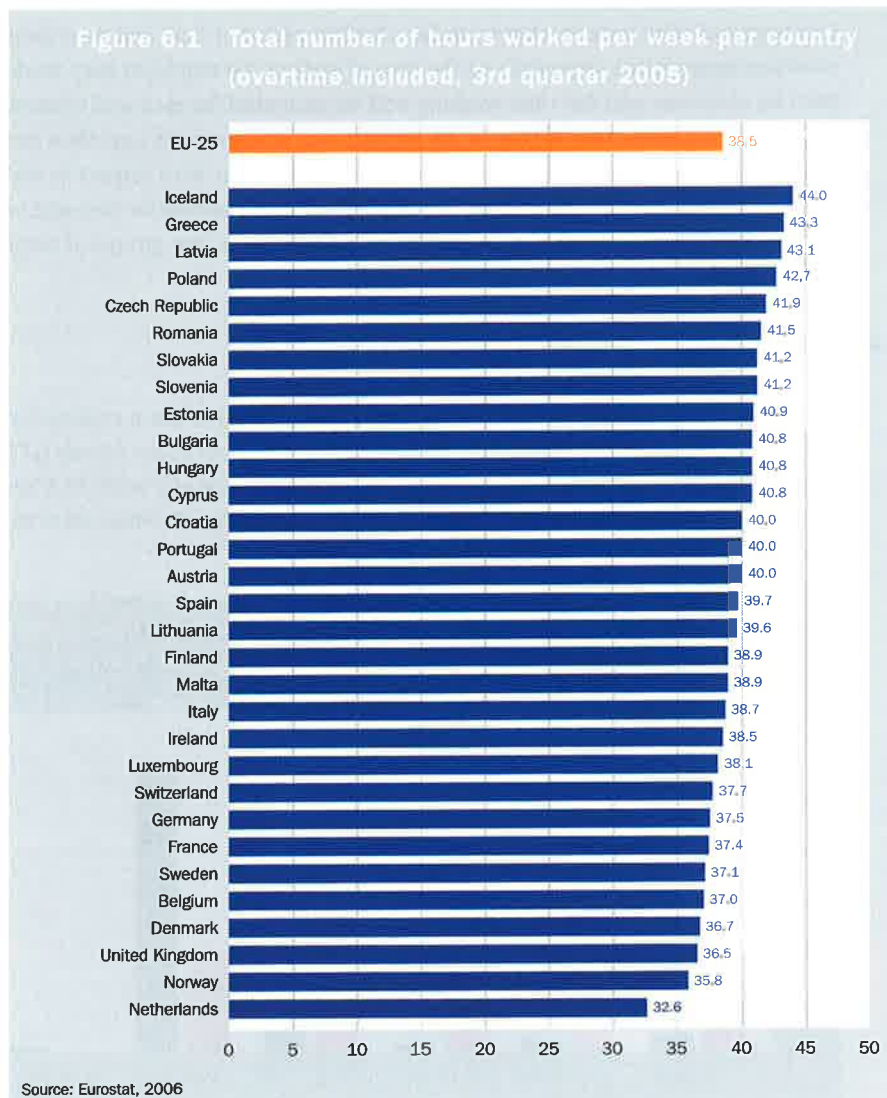
The developments over the past 20 years resulted in 2003 in average collectively agreed contractual weekly hours of 38 hours for the 15 EU members. The range of contractual weekly agreed hours across the 15 EU members was five hours – i.e. between 35 hours (France) and 40 hours (Greece). However, 14 EU countries have a contractual working week of between 37 and 39 hours inclusive. In the Netherlands, the 36-hour working week was the norm set in collective agreements, while average collectively agreed contractual weekly hours stood at 37.

Hours worked per week in the 15 EU members and Norway are higher.¹⁸ In 2003, hours worked per week for full-time employees were 38.9 hours and for part-time employees 19.7 hours. In the Netherlands, hours worked per week for full-time employees and part-time employees were 38.9 and 19.2, respectively. This data suggests that with respect to working time Dutch employees are not that different from the average 15 EU member employees. Yet, Eurostat data shows that there is a wide variation across the 15 EU members for the percentage of employees that works part-time. The highest percentage of part-time working is seen in the Netherlands, with 41%, followed far behind by Sweden (28%) and the UK (25%), and the lowest in Greece with 5%. Part-time working is generally a female pattern. In the Netherlands 71% of female employees work part-time, followed by the UK (45%), Norway (43%) and Belgium (40%). In Greece, with the lowest percentage, only 8% of female employees work part-time.

Figure 6.1 presents the most recent Eurostat-data on working hours, overtime included, across Europe. The table shows that the average workweek in 2005 in EU-25 is 38,5 hours. Workers in the Netherlands have by far the shortest work week, viz. 32,6 hours.

The availability and comprehensiveness of statistics on overtime working differs between countries (European Foundation, 2001). In Portugal, the extent of overtime working varies between 8% to 34% of employees, depending on which survey is referred to. In Italy, 23% of all employees work overtime, in the UK 26%, and in Norway 19%. In Sweden, 28% of women and 38% of men work overtime at least one day per week. The percentage is much lower in Finland, where overtime is worked by 8% of men and 6% of women. By contrast, in Germany over half (56%) of all employees work overtime at least once a month. Fouarge et al. (2002) showed that in 2000 in the Netherlands, 53% of the employees did work overtime (paid or unpaid), with an average number of weekly overtime hours of 3.2. Breedveld et al. (2001) present a comparable picture.

18 Total hours worked per week correspond to the number of hours the person contractually works, including extra hours - paid or unpaid - worked (but excluding travel time to and from work and main meal breaks).



6.5 Data: the Netherlands Survey on Working Conditions 2003

Data from the NEA is collected by means of a self-administered questionnaire among 10,075 employees aged 15-64. After weighting the data, the sample is representative of Dutch employees (Van den Bossche & Smulders, 2004). The survey is conducted solely among employees. Thus, self-employed people are not included.

For the current analyses, data on 344 employees was excluded because of missing data on age, gender, type of employment contract, and/or number of contract hours. For the analyses on overtime and total hours worked, temp agency workers and on-call wor-

kers were excluded because they work for a limited period of time and their number of overtime hours varies depending on the type of work or the employer they work for. Data on part-time and full-time working will be presented for men and women separately. The reason for this, is that in the Netherlands women work part-time more frequently than men. Furthermore, men and women may differ with respect to why they work part-time. By showing data on the number of hours worked for men and women separately, differences, but also similarities, between these two groups of employees will be clearer.

6.6 Results: Contractual working hours

According to the data of the NEA the average Dutch employee has a contractual working week of 32.3 hours. This is not far from the Dutch Labor Force Survey (LFS) data included in the Eurostat tables (see Figure 6.1). Men contractually work 36.6 hours on average and women 26.5 hours¹⁹. Figure 6.2 shows a detailed distribution of the contractual working week for male and female employees.



Sixty percent of the employees work on a full-time basis. As Figure 6.2 shows, gender differences play a significant role. While the majority of men (82%) work 36 hours or more, only 29% of women do so. Thirty five percent of women and only 8% of men work 20 hours or less.

¹⁹ Data on contractual working hours for employees excludes temp agency and on-call workers. Including these workers result in average contractual working hours of 36.1 hours for male employees, 26.1 hours for female employees and 31.8 hours for all Dutch employees.

What are the influences of characteristics such as age, education, family situation, employment contract on the number of contractual hours worked for men and women? To answer this question, two part-time groups were defined: employees working 20 hours or less and employees working 21 hours or more, but less than 36 hours. Full-time workers are those who work at least 36 hours. This cut-off point is chosen because in 2003 the 36-hour working week was set as the norm in Dutch collective agreements.

The effect of the characteristics, presented in Table 6.1 on the number of hours worked, is different for men and women.

Table 6.1 Mean number of contractual weekly hours worked for female and male employees in the Netherlands

	Women (N=4140)				Men (N=5593)			
	% in the sample	contractual weekly hours*			% in the sample	contractual weekly hours*		
		1-20	21-35	36+		1-20	21-35	36+
Total	100	36	35	29	100	8	8	84
Age								
15-24	17	45	22	33	13	40	8	52
25-34	29	26	35	39	27	4	8	89
35-44	27	40	39	21	27	2	9	89
45-54	21	34	39	37	24	3	8	89
55-64	6	41	42	17	9	6	11	83
Education								
low	29	49	31	20	31	9	6	85
intermediate	44	37	34	28	42	9	7	83
high	27	19	41	40	27	5	12	83
Family situation								
partner, no kids	28	20	37	43	25	4	10	86
partner and kids	37	55	36	9	53	4	7	89
alone and kids	8	29	47	24	2	25	12	63
living alone	19	19	31	50	14	11	13	76
other	7	47	26	28	7	46	4	50
Employment contract								
permanent contract	81	34	36	30	88	5	8	87
limited contract	8	29	40	31	6	8	13	79
temporary contract	6	41	30	29	4	32	19	49
temp agency contract	2	43	31	25	2	49	8	42
on-call contract	2	95	2	1	1	97	0	3

* rows total up to 100%
Source: NEA 2003

As their age increases, women are working full-time less often. In contrast, the majority of men work full-time in all age categories. Among men, a lower prevalence with increasing age is only seen after the age of 55. But even then, 83% is still working full-time. Among women, those with a high education level have a full-time job more frequently compared to women with a low or intermediate education level. For men, the influence of education on the percentage of male employees working part-time is small. Family situation for both men and women plays a significant role in determining the number of hours worked, although the picture for both sexes is different. As soon as women with a partner have children, only 9% of the female employees work full-time, whereas 43% to 50% of their female colleagues with no children at home, work full-time. Reasons for men not working full-time seems to be living alone or living alone and having care responsibilities for children.

Type of job contract is also a factor that influences the contractual weekly hours worked, especially among male employees. More than half of the male employees with a temporary employment contract or who work as a temp agency worker, work part-time. However, one has to keep in mind that only a small proportion (6%) of the male employees work on a temporary basis.

It still often occurs in the Netherlands that once people have children, women stop working. Furthermore, those women who continue working, work fewer hours. Data presented in Table 6.1 supports this profile. If women would continue working, one expects a similar proportion of men and women 'having a partner and having children at home'. Yet, far more men (53%) have children at home than women (37%), see Table 6.1. In addition, compared to the other family situations, a relatively high percentage of women with a partner and children at home (55% of all employees) work 20 hours or less.

For women, being alone and having care responsibilities for children increases the probability of having a full-time job, compared to the situation when there is a partner at home (compare 9% versus 24%). But still, compared to their male colleagues, only a small proportion work full-time (24% of the females versus 63% of the males). Noteworthy is the finding that 8% of the female employees live alone with children, whereas only 2% of the male employees do so. This is in line with the fact that after a divorce in the Netherlands children live more frequently with their mother than with their father.

To summarize, the data presented confirms the generally known pattern in the Netherlands that the majority of women work part-time, while the majority of men work full-time. This gender difference is present in all age categories, education levels, family situations and types of employment contract. Furthermore, the influence of sociodemographic characteristics on the contractual weekly working hours is different for women and men. Characteristics of women who work full-time less often, in particular less than 20 hours, are higher age, low education, and a family situation of a partner and children at home. For men these characteristics are being younger than 25 and the family situation of living alone or living alone and having care responsibilities for children.

6.7 Overtime and hours worked in total

How many hours do Dutch employees in total work? According to NEA-data the majority (76%) of the employees works overtime, see Table 6.2. More men than women work overtime, but the difference is relatively small (79% versus 71%). On average, a Dutch employee works weekly 3.7 hours more than the number of hours agreed upon; men work 4.6 hours extra and women 2.5. This means that the average Dutch employee has a total working week of 36.1 hours, overtime included: 41.2 for men and 29.0 for women.

Figure 6.2 shows the distribution of the total weekly hours worked in total for Dutch employees.

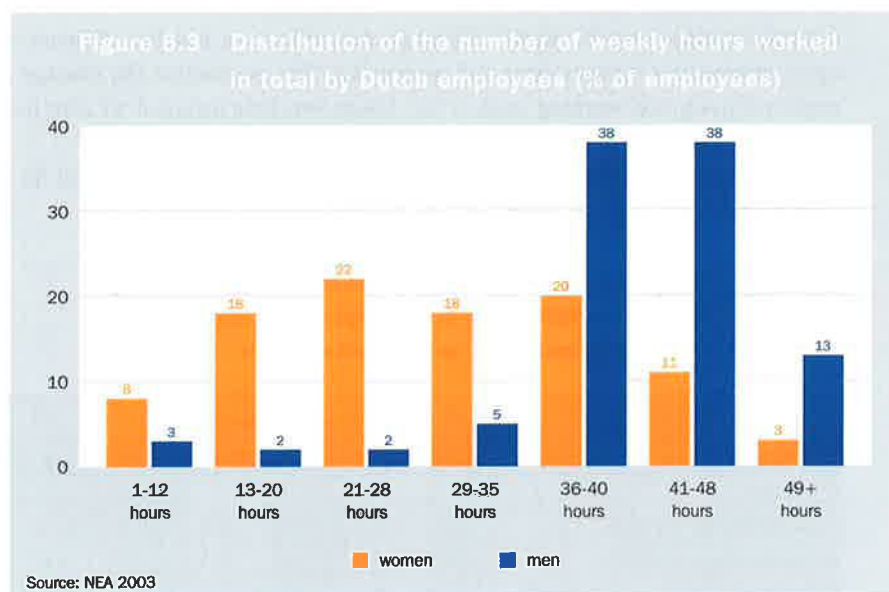
Table 6.2 Contractual working hours, overtime hours, and total working hours in the Netherlands among employees, stratified by categories of contractual weekly working hours*

Contractual weekly hours							
Working week	1-12	13-20	21-28	29-35	36-40	41+	Total
Women							
Contractual hours (mean)	8.6	17.8	24.5	31.6	38.0	52.1	26.5
Overtime hours (mean)**	2.5	1.9	1.9	2.3	3.4	4.5	2.5
Total hours (mean)	11.1	19.7	26.4	33.9	41.4	56.5	29.0
% employees working overtime	68	66	67	73	78	81	71
number of employees	451	889	723	703	1,151	16	3,933
% of total	11.5	22.6	18.4	17.9	29.3	0.4	100
Men							
Contractual hours (mean)	8.1	17.9	25.3	32.3	38.6	48.5	36.6
Overtime hours (mean)**	2.8	1.8	3.4	3.3	4.8	8.0	4.6
Total hours (mean)	10.8	19.8	28.7	35.7	43.4	56.4	41.2
% employees working overtime	77	64	81	71	80	84	79
number of employees	203	126	86	367	4,514	112	5,417
% of total	3.7	2.3	1.6	6.9	83.3	2.1	100
Total							
Contractual hours (mean)	8.5	17.8	24.5	31.9	38.5	48.9	32.3
Overtime hours (mean)**	2.6	1.9	2.1	2.7	4.5	7.6	3.7
Total hours (mean)	11.0	19.7	26.7	34.5	43.0	56.5	36.1
% employees working overtime	71	66	69	72	79	84	76
number of employees	654	1,015	809	1,079	5,665	128	9,350
% of total	7.0	10.9	8.7	11.5	60.6	1.4	100

* excludes temp agency and on-call workers

** includes employees with 0 hours overtime

Figure 6.3 shows that 50% of the male employees and 14% of the female employees work more than 40 hours in total. And 13% of the male employees even work more than 48 hours (Figure 6.3). In total 8% of the employees works more hours weekly than was legally allowed in the Netherlands in 2003 (see chapter 2).



Knowing the distribution of the contractual working hours per week among men and women (see Figure 6.2), it is not surprising to discover that the proportion of men with working weeks of more than 40 hours or 48 hours is significantly higher than the proportion among women.

Table 6.3 Mean number of weekly hours overtime and worked in total (overtime included) and the percentage of employees* with working weeks of more than 40 or 48 hours.

	Women				Men			
	mean number of weekly hours		% with weekly hours		mean number of weekly hours		% with weekly hours	
	over-time	worked in total	>40	>48	over-time	worked in total	>40	>48
Total	2.5	29.0	14	3	4.6	41.2	50	13
Age								
15-24	2.8	27.8	15	2	3.9	32.5	39	7
25-34	2.5	31.8	21	3	4.8	42.5	58	13
35-44	2.2	27.1	9	2	5.0	42.7	52	14
45-54	2.7	29.0	11	3	4.7	42.3	48	14
55-64	2.8	27.5	9	4	3.5	40.2	39	9
Education								
low	2.0	25.6	8	2	4.2	41.0	43	13
intermediate	2.4	28.6	13	2	4.4	40.7	50	11
high	3.2	33.1	22	4	5.5	42.1	57	15
Family situation								
partner, no kids	2.9	33.4	20	4	4.4	41.8	52	13
partner and kids	2.2	23.7	5	2	4.9	42.4	52	14
alone and kids	1.9	28.7	10	1	3.8	36.3	40	11
living alone	2.9	34.2	24	4	4.4	39.7	45	9
other	2.5	26.3	12	2	3.3	31.2	37	3
Type of contract								
permanent	2.5	29.1	13	3	4.7	41.7	51	13
limited	2.3	29.1	14	2	4.5	40.1	53	11
temporary	2.9	27.5	19	3	3.0	31.0	20	7
Contractual workweek								
1-20 hours	2.1	16.8	-	-	2.4	14.2	-	-
21-35 hours	2.1	30.1	2	1	3.3	34.4	8	3
36 or more hours	3.5	41.6	44	8	4.9	43.7	58	14

* temp agency and on-call workers excluded
Source: NEA 2003

For women, the distribution of prevalence of working weeks of more than 40 hours across the demographic characteristics, as presented in Table 6.3, follow the distributions of part-time and full-time working as seen in Table 6.1. To put it differently, women who work more frequently more than 40 hours are those who more frequently work full-time also. For men the picture is somewhat different. Compared to the dis-

tribution of the prevalence of part-time and full-time working, men in the age group 25-34 and men with an intermediate and high education level have relatively more frequently working weeks of more than 40 hours.

To summarize, this data shows that in the Netherlands, irrespective of the contractual working time, at least two thirds of the male and female employees work overtime. As a result, in 2003 one third of the employees worked weekly on average more than 40 hours and one in every twelve employees worked more hours weekly than was legally allowed in the Netherlands in 2003, more than 48 hours therefore.

6.8 Working time across employment sectors

In this section and section 6.9 data is presented on the working time of employees across the employment sectors they work for and occupational job categories. In contrast to the previous sections, the results are not shown for men and women separately.

The NEA-survey reveals that with respect to working time, large differences exist across employment sectors and across occupational job categories. As Tables 6.4 and 6.5 (see section 6.9) show, these differences are due on the whole to differences in the proportion of part-time and full-time workers within the employment sector or job category.

Table 6.4 Employment sectors: percentage of employees* contractually working less than 36 hours (part-time), mean number of contractual hours per week, weekly overtime hours and hours worked in total

	Number of employees	% working < 36 hour	Number of weekly hours		
			Contractual working hours	Hours overtime	Total hours worked
Manufacturing/industry					
1 Food, beverages & tobacco	263	28	33.6	4.6	38.2
2 Oil- & chemical	166	19	37.6	5.5	43.1
3 Fabricated metal products	213	12	37.2	3.4	40.6
4 Basic metals & electrical equipment	291	14	37.1	3.5	40.7
5 Machinery	82	12	37.5	4.6	42.2
6 Other manufacturing/industry	280	24	35.9	3.2	39.1
Construction					
7 Building industry	384	9	38.2	3.4	41.6
8 Building installation	79	5	39.0	4.0	42.9
9 Building completion	78	12	36.3	2.9	39.3
Wholesale & retail trade					
10 Sale & repair of motor vehicles	124	14	36.2	2.8	39.0
11 Wholesale of machinery & equipment	62	16	35.1	4.9	40.0
12 Department stores & supermarkets	409	72	23.8	3.8	27.5
13 Other wholesale & retail trade	793	39	31.3	3.5	34.8
Transport, storage & communication					
14 Road transport	191	17	37.4	10.6	48.0
15 Post and telecommunications	156	35	31.3	2.7	34.0
16 Other transport, storage & communication	161	29	35.1	3.9	39.0
Financial services					
17 Banking	273	29	33.1	2.9	36.0
18 Other financial intermediation n.e.c	202	31	33.8	2.4	36.2
Business services					
19 Computer and related activities	248	14	37.3	4.6	41.9
20 Legal, accounting & book-keeping	143	35	33.4	3.6	37.0
21 Architectural and engineering activities	94	28	35.9	4.5	40.4
22 Other business activities	432	36	34.0	4.6	38.6
Education					
23 Primary education	199	49	30.1	5.2	35.2
24 Secondary education	185	47	31.5	4.3	35.9
25 Higher education	104	45	31.0	4.1	35.1
Health care & social work					
26 Hospital activities	335	55	30.1	2.6	32.7
27 Other health care	419	76	25.8	2.8	28.6
28 Nursing homes, homes for the aged	277	79	25.0	2.8	27.8
29 Other social work activities	344	79	25.6	2.8	28.5
Public administration					
30 Local public administration	251	28	34.0	2.5	36.5
31 Public administration/ministries	164	19	35.4	3.1	38.5
32 Justice and judicial activities	50	29	33.6	2.6	36.2
33 Public security, law and order activities	63	21	34.7	3.7	38.4
34 Other public administration	135	24	34.8	2.5	37.3
Other services					
35 Recreational, cultural and sporting services	119	51	29.2	4.4	33.6
36 Other services	129	49	31.0	3.4	34.4
37 Agriculture, fishing, etc.	237	25	34.5	5.0	39.4
38 Electricity, gas and water supply	58	19	36.6	4.6	41.2
39 Hotels and restaurants	302	58	27.2	5.0	32.3
40 Other activities	823	37	32.1	3.1	35.3
Total	9,320	38	32.3	3.7	36.1

* temp agency and on-call workers excluded; Source: NEA 2003

From Table 6.4 it can be seen that large differences exist between employment sectors with respect to the proportion of employees working part-time or full-time. Employment sectors where employees most frequently have **full-time jobs** (with a contractual working week of at least 36 hours) are:

- Manufacturing/industry
- Construction
- Sale & repair of motor vehicles, and wholesale of machinery & equipment
- Road transport
- Computer & related activities
- Electricity, gas & water supply.

Employment sectors where half of the employees or more contractually work **part-time** (less than 36 hours), are:

- Department stores & supermarkets
- Education
- Health care & social work
- Recreational, cultural, sporting, & other services
- Hotels & restaurants.

Irrespective of the employment sector, the majority of employees do work **overtime**. The proportion of employees working overtime is lowest in the building sector, and highest in the manufacturing of machinery sector and the road transport sector. It is notable that the lowest prevalence is seen in employment sectors where the majority of the employees is male and working full-time.

The three employment sectors with the highest number of overtime hours are the road transport sector where employees work 10.6 hours a week extra, followed far behind by the oil & chemical industry with 5.5 hours and the primary education sector with 5.2 hours.

Altogether, within eleven of the 40 distinguished employment sectors, employees have a total working week of at least 40 hours. Number one is again the road transport sector where employees work on average 48 hours (!), followed by the oil & chemical industry with 43.1 hours and the building installation sector with 42.9 hours. It is worth noticing that employees working in the education sector and the hotel and restaurant sectors, both with a large proportion of part-time workers, work on average 4 to 5 hours a week extra. This is relatively a lot compared to their contractual working hours.

Also the road transport sector is worth mentioning, because the average employee works 48 hours a week. Looking in more detail at the data from the NEA-survey, it reveals that 47% of the employees working in this sector reported that they work more than 48 hours in total. Thus, almost half of the employees working in the road transport sector work more hours than was allowed by the Dutch working hour regulations in 2003.

6.9 Working time across occupational job categories

Working time data stratified by occupational jobs shows that some jobs are performed more often by full-time workers (36 hours or more) and others more often by part-time workers (Table 6.5). These differences are greater than differences in working time across employment sectors.

The NEA-survey reveals that almost one quarter of the employees have jobs which are most frequently performed by **part-time workers**. These employees have the following jobs:

- Secretaries & typists;
- Shopkeepers & salespersons;
- Cooks, waiters & bartenders; building caretakers & cleaners; hairdressers & beauticians;
- Medical doctors, dentists, etc; Nurses & medical orderlies; personal care workers.

As a result, on average their contractual working week ranges from 21.6 (building care takers & cleaners) to 27.9 hours (secretaries & typists).

Eleven percent of the employees have jobs which are most often performed by full-time workers:

- Plumbers, pipe-fitters etc
- Construction workers
- Electrical & electronic equipment mechanics & fitters
- Machinery mechanics & fitters
- Heavy-truck & lorry drivers
- Sales representatives.

As a result, compared to employees with other jobs these employees have a relatively long contractual working week, varying between 38.3 and 39.6 hours.

In line with the data in Table 6.4 is the high number of overtime hours for employees with the following jobs:

- Truck & lorry drivers: 14,8 hours per week
- Sales representatives: 7.3 hours
- Managers: 6,8 hours
- Teachers in primary education: 5,8 hours
- Cooks, waiters & bartenders: 4,8 hours (despite their relatively high proportion of part-time workers)

Of all employees, the heavy-truck & lorry drivers have the longest working week. Two thirds of these drivers work more than 48 hours in total. Not all heavy-truck & lorry drivers work in the transport sector. One third of these drivers works for other employment sectors, such as the manufacturing sector, wholesale & retail trade sectors or agriculture. In these sectors long working weeks also occur, although less fre-

Table 6.5: Occupational job category: Prevalence of employees working less than 36 hours (part-time), mean number of contractual weekly working hours, overtime hours and hours worked in total

Occupational job categories	Number of employees	% working < 36 hour	Mean number of weekly hours		
			Contractual working hours	Hours overtime	Total hours worked
Craftsmen/industrial workers					
1 Painters	48	10	36.3	1.3	37.7
2 Plumbers, pipe-fitters, welders, etc.	132	2	38.9	3.6	42.5
3 Construction workers	270	3	39.0	2.7	41.7
4 Printing & related trades workers	68	17	35.6	2.2	37.8
5 Food processing & related workers	135	43	29.3	4.2	33.4
6 Tailors, sewers & upholsterers	35	37	32.0	1.9	33.9
7 Electrical & electronic equipment mechanics & fitters	105	6	38.5	3.5	42.0
8 Machinery mechanics & fitters, instrument makers & repairers	192	7	38.3	4.2	42.5
9 Other craft & industrial workers	325	19	36.9	3.1	40.0
Drivers/transport workers					
10 Bus & train drivers, ships' crew	55	25	36.7	2.7	39.4
11 Heavy-truck & lorry drivers	138	8	39.6	14.8	54.4
12 Transport labourers & freight handlers, crane operators	114	11	37.1	3.0	40.1
13 Other transport workers	95	18	31.5	4.5	42.0
Administrative workers					
14 Secretaries, typists	352	66	27.9	1.7	29.6
15 Bookkeepers, cashiers	260	40	31.6	2.7	34.3
16 Mail carriers, sorting clerks	46	48	27.2	3.0	30.2
17 Other administrative professionals	655	50	30.5	2.1	32.7
Commercial/retail workers					
18 Sales representatives	164	5	39.0	7.3	46.3
19 Shopkeepers, salespersons	718	69	23.9	3.2	27.1
20 Insurance and estate agents	115	25	34.8	2.7	37.5
21 Managers in wholesale & retail trade	45	38	32.8	4.8	37.6
22 Other business professionals	368	29	34.6	3.8	38.4
Service workers					
23 Cooks, waiters & bartenders	210	61	25.6	4.8	30.5
24 Building caretakers & cleaners	119	79	21.6	1.7	23.3
25 Policemen, fire-fighters & guards	137	16	35.7	4.2	40.0
26 Hairdressers & beauticians	27	89	26.4	0.8	27.3
27 Other service workers	498	43	30.9	3.3	34.2
Health care workers					
28 Medical doctors, dentists, etc.	112	56	30.8	4.0	34.9
29 Nurses & medical orderlies	477	75	26.7	2.5	29.2
30 Personal care workers	294	88	22.7	2.6	25.2
Teachers					
31 Teachers primary education	158	45	31.1	5.8	36.9
32 Teachers secondary education	140	49	31.1	4.4	35.5
33 Teachers higher education	41	44	31.7	4.6	36.3
Specialists					
34 Architects, engineers, etc.	269	14	37.7	4.2	41.9
35 Statistical, mathematical & computing professionals	394	13	37.0	3.3	40.3
36 Artists & other specialists	328	30	34.4	3.7	38.1
Agricultural workers					
37 Gardeners, horticultural, etc. workers	121	27	33.3	4.7	38.0
38 Farmers, fishery workers, etc.	83	33	33.1	3.7	36.8
39 Managers	687	14	37.1	6.8	43.9
40 Other professionals	805	39	32.7	3.2	35.9
Total	9,337	38	32.3	3.7	36.0

* temp agency and on-call workers excluded; Source: NEA 2003

quently. Within the road transport sector 84% of the heavy-truck & lorry drivers work more than 48 hours in total, whereas among those working in other employment sectors this prevalence is lower, 35%.

6.10 Summary and discussion

Data presented in the previous two sections shows that large differences exist between working time across employment sectors and occupational job categories. Working weeks of more than 40 hours is contractual practice for the majority of employees working in the industry, construction, transport and computer and related activity sector. The majority of the employees working in these sectors works full-time. This data also shows that in some sectors and for some occupational jobs the mean number of overtime hours is relatively high compared to the contractual working week, for example the education sector and hotel and restaurant sector.

The question arises what will happen when the contractual working week is extended by two hours for full-time workers, as advocated by employers and also by the Dutch Minister of Economic Affairs. Will it reduce the number of overtime hours, because more work can be done in contractual working hours, or will there be no effect on the number of overtime hours because more has to be done during a working week? Will there be differences in effect on working time across employment sectors and occupational jobs? Furthermore, an extension of the contractual working week will go hand in hand with a reduction in free time. How will people deal with this, especially (part-time) workers with childcare responsibilities? Time will tell whether the contractual working week will be lengthened in the Netherlands (and Europe) and for which employees the extension of the working week will have the largest effect on working time.

6.11 Literature

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Chapter 7

VDU-work and working at home and working from home

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Summary

This chapter deals with the spread of working at home, teleworking and working with a computer, and their impact on the quality of work in the Netherlands. Almost two out of every three Dutch employees perform their work from behind a Visual Display Unit (VDU). In the vanguard of computer users we find administrative, commercial, managerial and professional workers.

The pattern of workers at home, without a computer, matches the pattern of VDU-workers, with the important exception of the clerical and administrative workers. In terms of health and satisfaction they resemble their teleworking colleagues. The latter, however, are significantly more satisfied with their job than those who do not work from home. For the risk of RSI working at or from home is not discriminating: age and sex are the strong predictors here. Computer-related work is, therefore, a mixed blessing. If used moderately it enriches work, if used for long stretches of time it is a risk for the occurrence of RSI. At the same time, the employees concerned are not less satisfied with their work and in the case of telework they are actually more satisfied.

7.1 Theme and hypotheses

Internationally comparative research (Paoli 1992; Paoli 1997; Paoli & Merllié 2001; Smulders 2000; Andries, Smulders & Dhondt 2002) shows that the Netherlands is the number one country in terms of the use of computers in factories and offices. Six out of every ten workers in the Netherlands work from behind a computer at least 25% of their working time. In the UK, second in line, this situation applies to only four out of every ten workers. Again, the percentage of employees working with a computer during the full length of the working day is the highest in the Netherlands and concerns one out of every three Dutch workers.

Not every employee possesses the general digital competences needed for working with computers (Ministry of Employment and Social Affairs 2001). A digital inequality exists between various categories of employees. Moreover, the digital inequality between higher and lower educated employees, between younger and older employees and between the employed and the unemployed is on the rise. In particular, younger

and higher educated workers use computers more frequently than their older and less well educated colleagues. Smulders (2000) also found an overrepresentation of the higher educated among the users of computers. A higher education usually entails a higher pay cheque. Borghans and Ter Weel (2002) even claim that a high salary is a precondition for computer use: '... the decision to introduce computers at the workplace depends ... directly on the worker's wage'.

Much research has already been conducted as to the effects of computer and VDU work on the quality of work (Zapf 1995; Steijn & De Witte 1996; Medcof 1996; Carayon 1997; Smith 1997; Burris 1998; Rantanen 1999; Smulders 2000; Bijleveld et al. 2000; Andries et al. 2002). Some, like Medcof (1996), stress the disadvantages of introducing VDU work while others, such as Smulders (2000), emphasize its advantages. Andriessen (1999) has demonstrated that new forms of work in which ICT applications are prominent are accompanied by new problems. These problems cover all aspects of the employment relationship, i.e. wages and conditions (precarious contracts), the quality of work (information overload and swifter obsolescence of skills and qualifications), working conditions (inadequate working spaces, more stress because of computer disturbances) and industrial relations. Employees in lower functions and older employees are especially vulnerable to the occurrence of new technology.

VDU work can contribute to a better quality of work. However, there are signs that if VDU work is performed for too long a stretch of time, it may prove detrimental to the quality of work. From research already conducted we can infer that VDU work on the whole scores better on quality than non-VDU work (Kraan et al. 2000; Smulders 2000; Andries et al. 2000). Yet, the time actually spent behind the monitor determines for a large part the problems of computer usage. Introducing computers at work, therefore, may prove a 'mixed blessing'. The employee who works all day long with a computer is vulnerable to stress, burnout and RSI. Part of the risk may be due to the fact that the computer electronically controls the workflow and thus can develop into a straightjacket (Van der Aalst & Van Hee 2001), leading to over demanding workloads (Kraan et al. 2000). On the other hand, the employee who varies VDU work with other work, stands to gain from pleasant and healthy work. A number of research publications indicate that the sheer intensity of VDU work can be held accountable for neck, shoulder and arm complaints (Blatter et al. 2000; Hanse 2002; Jensen 2002; Nakazawa et al. 2002). Nakazawa et al. (2002) conducted research among employees working at the computer for at least five hours per day. Repeated measurements among these employees showed, next to physical complaints, a series of mental problems such as insomnia, fatigue, feelings of anxiety and reluctance to go to work. Their recommendation is to fix a time limit (at five hours maximum) for VDU work.

The introduction of the computer enables teleworking for many employees. By teleworking we mean working from home or, more generally, working at a distance from the employer by means of a computer or other forms of technology. When looking at the spread of teleworking in Europe we first need to specify the place of work

itself. Paoli & Merllié (2001) observe that in the Netherlands 7% of employees are teleworking from home for at least one fourth of their working hours. Here, Great Britain leads the pack with 10%, followed by Luxemburg (9%) and Finland (8%) and the Netherlands in fourth place. The picture changes once we add mobile working to teleworking from home. Here, the US has the highest score, followed by Denmark and Finland (SIBIS 2002).

Teleworking is positively related to education and specific occupations (Bailey & Kurland 2002). Paoli & Merllié (2001) find that 'teleworking is more common in certain occupations and higher professional categories: 15% of managers, 12% of professionals and 8% of technicians engage in teleworking at least one quarter of the time, compared to only 1% of craft workers and machine operators'.

There is a difference between working *from* home, with the help of computer and other information technology, and the long tradition of working *at* home (ranging from envelope pasting and the peeling of shrimps up to and including coding jobs and the folding of flyers). These jobs were mainly the province of low educated or marginal workers. Even more than in the case of teleworking from home, in traditional work performed at home the result must be easily measurable, vindicated by the widespread use of piece rates (incentive wages).

Motives for working at or from home may overlap. Important drives are the wish to reduce the time for commuting to and from work, to find a better combination of work and care, or of work and domestic chores and to improve the possibilities to balance, in particular for reasons of health, work demands and individual capability. According to Statistics Netherlands (CBS), preferences for teleworking do indeed rise when the distance to work increases. The Statistical Bureau estimates that the average travel distance between work and home increased between 1988 and 1998 by more than 2 kilometres to slightly more than 16 kilometres (Voogdt-Pruis 1998). The average travelling time has thus increased and here we find one important motive for working at and from home.

Working from home and teleworking may help many people to find a better balance between the demands of work and care. Estimates by the Ministry of Employment and Social Affairs indicate that about two million people in the Netherlands experience problems in combining work and care. The rise in the number of single parent families and of two-income families underlies these problems (Van Klaveren et al. 2003). Research by Van Vuuren et al. (1998) does indeed demonstrate that more discretion in scheduling the day is an important explanation of preferences for teleworking. The same research showed that combining work and care is not at all identical with combining work demands and household duties. The former actually is less important as a motive for teleworking than the latter, a finding corroborated by other research. For example, the presence of children at home did not impact upon the preference for teleworking. Men, moreover, are more in favour of teleworking than women. Teleworking, by this token, is not an alternative for day care for children. Women with

children choose part-time work, rather than telework. On the other hand, interviews with teleworking women indicate that this form of work eases the re-entry into the labour market. Teleworking, to sum up, is less a solution for combining work and care than it is a solution for the tension between work and domestic demands (going to the post office, running errands, visiting the hairdresser, and so on).

As to the effects of working from home and teleworking, it is regularly assumed that these forms of work boost work satisfaction and lead to fewer health complaints such as burnout and RSI. Research, however, shows the opposite: teleworkers often work too many hours, exploit themselves and suffer as a result from burnout and stress. Other pitfalls concerning the (self) management of telework are: the blurring of the boundaries of work and care, the perception too late of impending problems and drawbacks, the chances for opportunistic employee behaviour, the difficulty of effectively sharing knowledge leading to losses in collective productivity and reduced commitment (Vaas 2002). A review of the research literature (Bailey & Kurland 2002) concludes as well that so far there is little evidence for the existence of a positive relationship between teleworking, work satisfaction and productivity.

Our review of the research literature leads to the following hypotheses:

On working with a computer:

1. The better educated the worker, the higher the pay of workers and the younger the worker is, the more they work with a computer
2. Workers in some occupations (administrative, commercial, professional, managerial) work more with a computer than workers in other occupations
3. The relation between the extent of working with a computer and employee well-being is curvilinear: moderate use enriches work, continued use during long stretches of time constitutes a risk to body and nerves
4. The more employees work with a computer, the less work satisfaction they report.

On working from home and teleworking:

5. The more often employees work with a computer, the more they telework
6. Employees in certain occupations (managers, professionals, commercial workers) work more from home and telework more than workers in other occupations
7. The greater the distance between work and home, the more often people telework or work from home
8. The more hours spent on household duties, the stronger the occurrence of working from home or teleworking
9. Working from home and teleworking correspond to more overtime
10. There is no relationship between working from home and teleworking on the one hand and work satisfaction and health complaints on the other hand.

7.2 Method

7.2.1 Data

At the close of the year 2000 the TNO Work Situation Survey was held for the first time (Smulders et al. 2001). At the end of 2002 the survey was held for a second time. The questionnaire measures every second year the work situation among a random sample of the occupational population. To correct for eventual selectivity due to non-response, weighting coefficients were used in order to provide for representative outcomes. In 2000 some 4334 working people returned the completed questionnaire (response of 53%). In 2002 the number was 3945 working people (response of 45 %). For this analysis we combined the data of the two measurements. The questionnaire contained questions on the demographics of the working population, the home situation, the employment contract, the working conditions and health. Questions were also posed on the time at work spent behind a computer, (partly or completely) working at home, and (partly or completely) teleworking, the latter defined as working from home with a computer.

7.2.2 Variables and analysis

We were looking for (1) the extent of working with a computer, working at home and teleworking (working from home) in the Netherlands, (2) the determinants and motives for working at home and teleworking, and (3) their effects. In the analysis of the effects we considered several jobs (type of occupation and company) and personal characteristics (age and sex). The determinants and motives are related to the type of occupation, sex, education, travelling time to and from work, household activities and health experiences. The effects we investigated are overtime, burnout, RSI and work satisfaction. Table 7.1 contains an overview of how the variables have been operationalized and of the scale reliabilities. Of course, the work characteristics and the effects of work are influenced by both computer, home and telework work aspects and by the type of occupation people work in. In our analysis we focus on those occupations in which the use of a computer is sizeable.

Table 7.1 Variables, questions, and values of answers

Name of variable	Questions	Values/recodes
ICT-variables		
VDU work	Hours per day behind VDU or computer?	None, 1-2 hours, 2-4 hours, 4-6 hours, 6-8 hours
Work at home	Do you work at home, no computer involved	Yes, no
Telework	Do you work from home with a computer (telework)?	Yes, no
Determinants		
Sex		Male, female
Age		15-30, 31-45, 46-64
Education level		Lower, middle, higher
Income (in Euros)		Less than 1000, 1000-1750, > 1750
Commuting time	How many hours do you commute each day?	0, 1, 2, and >3 hours
Time for domestic duties	How many hours do you spend on household duties each day?	0 hour, 1 hour, 2 hours, 3 hours, > 4 hours
Overtime	How many hours overtime do you work each week?	0 hour, 1-2 hours, 3-8 hours, > 8 hours
Job autonomy (Job control)	5 items (alpha = .84)	Never, sometimes, often, always
Task variety (Skill discretion)	5 items (alpha = .71)	Never, sometimes, often, always
Occupation	Can you indicate which occupation or function your job fits into best?	Industrial, transport, administrative & clerical, commercial & sales, service, care, teaching, professional, agricultural, management, other
Effects		
Burnout *)	5 items (alpha= .92): feeling mentally exhausted by work; feeling run down at the end of the day; feeling tired when getting up in the morning; etc.	Never, a few times a year or less, once a month or less, once a week, a few times a week, daily
RSI	4 items (alpha = .76): during the past 12 months pain/discomfort in neck, shoulders, arms/elbows, wrists /hands	Never, once, prolonged or several times, prolonged and several times
Work satisfaction	All in all, how satisfied are you with your work?	Very dissatisfied, dissatisfied, neither dissatisfied nor satisfied, satisfied, very satisfied

* Measured by means of the 'emotional exhaustion' subscale of the Utrecht burnout scale (UBOS-A; Schaufeli & Van Dierendonck, 2000); standard scoring.

The statistical analyses on the differences between the occupational groupings were performed by means of comparing percentages. In a multivariate analysis we looked at how motives for and effects of working with the computer, teleworking and working at home were related to the prevalence of RSI, burnout, work satisfaction. By means of linear regression we discounted the eventual effects of other variables. Where required, we have elaborated on our techniques of analysis in the section on results.

7.3 Results

7.3.1 Working with a VDU or a computer

The results of our survey reveal that working with computers (VDU-work) is widespread in the Netherlands. Almost two thirds (63%) of the workers work at least one hour a day with computers. About 17% work with computers every day for between 6 to 8 hours.

Table 7.2 shows differences in working with computers between male and female workers, lower, middle and higher educated workers, workers with lower, middle and higher monthly incomes and younger, middle-aged and older workers. We reduced our (Table 7.1) five values to three: none, use from 1 to 6 hours, use from 6 to 8 hours (per day).

Table 7.2 Percentage of workers working with VDU or computer hours a day by sex, age, education and monthly income

	Never	1-6 hours	6-8 hours
Sex*			
Male	36.8	48.3	14.9
Female	35.8	45.1	19.1
Age*			
15-30	38.0	41.0	21.1
31-45	31.8	50.7	17.4
46-64	42.2	46.9	10.9
Education level*			
Lower	68.7	27.4	3.8
Middle	29.6	50.3	20.1
Higher	13.2	62.4	24.4
Income*			
< 1000 Euro	56.1	33.3	10.7
1000-1750 Euro	36.9	45.4	17.7
> 1750 Euro	12.0	66.7	21.3
Total	36.3	46.9	16.7

* p < .001 (Chi Square tests; n = 6853-7206)

Female workers work significantly more hours with a computer than male workers in the 6-8 hours range. Lower, middle and higher educated workers differ significantly in the degree they work with computers in the Netherlands. The higher one's education level the more frequent the use of the computer. Workers with a lower level of education work significantly less with computers than those with a middle and higher education level. We also find that if lower educated workers use a computer, they work less hours working with computers than those educated at a middle and higher level. The relation between income and the use of the computer is the same as in the case of education: the higher one's income, the more frequent the use of the computer. Also, Table 7.2 shows that differences in the use of computers exist between three age groups (younger: < 30 years, middle-aged: 31 – 45 and older: > 45 years). The middle-aged workers use the computer the most.

The next question is how the use of computers is distributed over all the various occupations. The findings are summarized in Table 7.3.

Table 7.3 Percentage of workers working with VDU or computer hours a day by occupation

	Hours working with VDU or computer a day		
	Never	1-6 hours	6-8 hours
Craft and industrial workers	60.8	36.2	3.0
Transport workers	74.5	19.8	6.0
Administrative workers / clerks	4.7	47.0	48.3
Commercial workers/ sales workers	28.7	51.7	19.5
Service workers	44.1	48.3	7.6
Healthcare workers	59.6	39.0	1.4
Teachers	22.0	75.9	2.1
Professionals	4.7	52.2	43.0
Agriculture workers	75.7	22.4	2.6
Managers	12.9	75.6	11.5
Other workers	12.9	57.3	15.9
Total	36.6	46.8	16.7

p < .001 (Chi Square tests; n = 7022)

As we predicted, working with computers varies greatly between occupations in the Netherlands. Healthcare workers and blue-collar workers like farmers, truck drivers, craft workers use computers significantly less than the average worker, while clerks and professionals in particular work with computers significantly more hours per day than the average.

Table 7.4 presents the results of logistic regression analyses. In these logistic regression analyses we have analyzed the influence of the amount of hours working with a computer, while controlling for demographic characteristics such as age, education and monthly income, on the well-being of the workers in terms of burnout, RSI and job satisfaction. The outcomes of the logistic regression are expressed in Odds Ratio's for every category of an independent variable. The Odds Ratio can take values between 0 en + infinite. The ratios are expressed in terms of a referent category with a value of 1. Therefore, an Odds Ratio larger than 1 means that the category has a higher score on the dependent variable than the referent category; an Odds Ratio smaller than 1 means that the category has a lower score on the dependent variable than the referent category.

Table 7.4 Results of logistic regression analyses in Odds Ratio's, for the use of computers, three demographic variables, Job autonomy and task variety in predicting burnout, RSI and job satisfaction

Independent variables	Burnout (low-high)	RSI (low-high)	Job satisfaction (satisfied-not satisfied)
Use of computer or VDU			
1-6 hours vs 0 hours	0.67 ***	0.76*	1.18 **
6-8 hours vs 0 hours	1.10	1.52 **	1.01
Sex			
Female vs male	1.05	2.27 ***	1.04
Age			
31-45 vs. 15-30 yr	0.99	1.33 *	1.06
46-64 vs. 15-30 yr	1.62 ***	2.48 ***	1.37 ***
Education level			
middle vs. lower	1.18	0.70 **	0.92
higher vs. lower	1.10	0.67 **	1.09
Job autonomy			
Often, always vs. sometimes, never	0.52 ***	0.77 **	1.76 ***
Task variety			
Often, always vs. sometimes, never	1.32 **	0.94	1.34 ***

* p<.05 ** p< .01 *** p < .001 (n = 7006-7098)

The results of these logistic analyses partly confirm our hypothesis that the relation between the amount of work with computers and feelings of well-being is curvilinear. What we do find is that workers who work with computers but for less than 6 hours a day, experience less burnout (emotional exhaustion), less RSI and are more satisfied with their jobs than workers who do not work with computers at all.

We do not find that extreme use of the computer means an overall risk for body and mind. It only means a risk for RSI. Table 7.4 shows that workers who use computers more than 6 hours a day suffer indeed more from RSI than workers who do not use the computer. However, extreme use of computers does not have consequences for burn-out or job satisfaction. Workers who work with computers for more than 6 hours are just as burnt out *and* satisfied as workers who do not work with computers at all.

7.3.2 Working at home and working from home (telework)

Working at home is no exceptional phenomenon in the Netherlands. One fifth of the Dutch workers works at home. Most of the home-workers do this without the use of a computer. Just three percent of the Dutch workers considers him- of herself to be a teleworker, e.g. work from home or at a distance from the employer and performs his or her work with the use of a computer or other forms of technology. As one might expect, the more workers work with computers, the more they telework.

Table 7.5 shows the differences between occupations in working at home or teleworking in the Netherlands.

Table 7.5 Percentages of workers working at home without a computer or from home (telework) by occupation

	Working at home and working from home		
	Never	At home (nc)	From home (wc)
Craft and industrial workers	93.4	6.1	.5
Transport workers	94.2	5.2	.5
Administrative workers / Clerks	89.3	9.3	1.4
Commercial workers/ sales workers	78.0	15.9	6.1
Service workers	87.6	10.9	1.5
Healthcare workers	87.7	12.0	.3
Teachers	20.0	76.5	3.5
Professionals	62.4	28.6	9.0
Agriculture workers	89.8	9.3	.8
Managers	61.2	34.0	4.7
Other occupations	74.6	20.6	4.9
Total	81.0	16.2	2.8

nc: working at home, no computer involved; wc: working from home with computer (telework)
 p < .001 (Chi Square tests; n = 7022)

We find significant differences between the occupations. Moreover, occupations that score high on working at home can score low on working from home, with the teachers as the most vivid illustration. Four out of five teachers carry out work at home. Thus, the large majority of teachers do indeed work at home for part of the day; as a rule, however, they do not use a computer for those activities. For other occupations

the pattern is comparable, but they work far less frequently at home and the gap separating working at home and teleworking is not as clear as in the case of the teachers. Indeed, for teleworking the teachers only come in fifth place; they are preceded by professionals, commercial and sales workers, other occupations and managers.

Is working at and from home influenced by factors such as commuting time, household and care duties, and overtime (making more hours)? Table 7.6 shows the relation between hours spent on commuting, household chores and overtime and working at home or teleworking in the Netherlands.

Table 7.6 Results of logistic regression analyses in Odds ratio's, for the amount on hours spent on commuting, household duties and overtime and three demographic variables in predicting working at home with or without a computer

	Working at home without a computer (no, yes)	Working from home with a computer (no, yes)
Commuting each day		
1 hours vs 0 hours	0.80	0.38 ***
2 hours vs 0 hours	1.10	0.71
3 hours or more vs 0 hours	0.99	1.04
Household duties each day		
1 hours vs 0 hours	1.19	1.04
2 hours vs 0 hours	1.39	0.77
3 hours vs 0 hours	1.32	0.84
4 hours or more vs 0 hours	1.29	1.06
Overtime each week		
1-2 hours vs 0 hours	1.70	1.09
3-8 hours vs 0 hours	5.37 ***	2.90 ***
9 hours or more vs 0 hours	5.47 ***	4.96 ***
Sex		
Female vs male	0.93	0.48 ***
Age		
31-45 vs. 15-30 yr	2.04 ***	1.83 **
46-64 vs. 15-30 yr	2.39 ***	1.29
Education level		
middle vs. lower	2.10 ***	3.12 ***
higher vs. lower	9.05 ***	10.30 ***

*** p < .001 (n = 7006-7098)

Examination of Table 7.6 reveals that in the Netherlands employees older than 30 years and employees educated at a middle and higher level work more at home wit-

hout a computer than younger employees and employees educated at a lower level. The effects of education are actually very strong, for both working at home and even more so for working from home. There are strong links as well between overtime and working at and from home: people do indeed take their work home. No relation exists between working at home and the hours workers spend commuting and on household activities. With regard to the latter, and assuming that women perform most of the household duties, we find that women work less at home and, in particular, from home than men do. Household duties are no explanation for working at or from home.

Table 7.7 Results of logistic regression analyses in Odds Ratio's, for working at home with or without a computer and some demographic variables in predicting burnout, RSI and job satisfaction

Independent variables	Burnout (low-high)	RSI (low-high)	Job satisfaction (satisfied-not satisfied)
Working at home without a computer vs not working at home	1.14	0.82	1.15
Working from home with a computer (teleworking) vs not working at home	0.69	0.95	1.49 *
Sex			
Female vs male	1.08	2.30 ***	1.04
Age			
31-45 vs. 15-30 yr	0.94	1.27*	1.06
46-64 vs. 15-30 yr	1.52***	2.35 ***	1.39 ***
Education level			
middle vs. lower	1.07	0.71 **	0.95
higher vs. lower	0.95	0.67 **	1.09
Job autonomy			
Often, always vs. sometimes, never	0.51***	0.77 **	1.71 ***
Task variety			
Often, always vs. sometimes, never	1.24*	0.89	1.33 ***

* p<.05 ** p< .01 *** p < .001 (n = 7006-7098)

Table 7.7 shows that - as we expected - no relation is found between working at and from home and burnout and RSI. Yet, age enhances one's vulnerability to RSI and burnout. The paradox is that age contributes as well to job satisfaction. Education is negatively related to RSI and shows no meaningful relationship with burnout and job satisfaction. Job autonomy and task variety, as could be expected, are negatively related to RSI and positively to job satisfaction. Job autonomy is also negatively related

with burnout, while task variety is positively related with burnout. There is, as well, a positive and significant effect of working from home on job satisfaction. The same holds for working at home but here the effect is smaller and not significant.

7.4 Conclusions and discussion

Working with computers (VDU-work) is widespread in the Netherlands as almost two thirds (63%) of the workers work at least one hour a day with a computer. The overall picture, however, should be adjusted for factors such as pay, age, level of education and type of occupation and industry (hypotheses 1, 2 and 6: confirmed, except for age). Workers with a lower level of education work significantly less with computers than those educated at a middle and higher level. Working with computers varies greatly between occupations in the Netherlands. Workers in the healthcare sector and blue-collar workers like farmers, truck drivers and craft workers work significantly less with computers than the average worker, while clerks and professionals work significantly more hours a day with a computer (hypothesis 2: confirmed).

We do not find, contrary to our expectations, that extreme use of the computer involves an overall risk to body and mind (hypothesis 3: not confirmed). It is, however, a risk for RSI. Workers who use computers more than 6 hours a day suffer more from RSI than other workers. However, extreme use of computers does not have consequences for burnout or for job satisfaction. Workers who work with computers more than 6 hours a day are just as burned out and satisfied with their jobs as workers who do not work with computers (hypothesis 4: not confirmed).

At the start of the new century one out every five employees (excluding the self-employed) perform their work at a distance from their employer at least part of the time. Among them we find a small fraction of teleworkers. Telework is work performed at a distance from the employer's location with the use of a computer. It received a favourable governmental press as it was expected to reduce commuting and so ease the occurrence and burdens of traffic congestion. Also, it was supposed to contribute to a better work-life balance, a fairer distribution of household duties and to more job satisfaction. It seems appropriate to dampen these hopes and expectations. Working at or from home shows no consistent relationship with either commuting time or household duties (hypotheses 7 and 8: not confirmed). These findings are corroborated by the profile of the teleworker in particular. Working with a computer and teleworking go together (hypothesis 5: confirmed). The teleworker is more often than not male, he is highly educated, works long hours (partly in overtime), holds a fairly autonomous job and earns a relatively high income (hypotheses 1 and 9: confirmed). We find the teleworker predominantly in professional and commercial occupations. In occupations such as healthcare, manufacturing, construction, transport and agriculture the teleworker is a rare phenomenon. The occupation of the teacher is a case apart: low in

telework, uniquely high in working at home.

Overall, we find that teleworkers show a higher level of job satisfaction than non-teleworkers. The question is whether this outcome can be attributed to telework or whether the well-known job characteristics (job autonomy and variety for example) are the better explanation of satisfaction. In a sense the latter do indeed give a stronger prediction. Nonetheless, we do in part find an independent effect for teleworking as such. The plea for more telework will not solve all problems therefore. But more telework may contribute to flexible hours and more productive work and should be valued accordingly. On the other hand, telework carries its own dangers, in particular because of the long hours teleworkers make. Telework, as it now stands, is a mixed blessing.

7.5 Literature

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Chapter 8

Health, chronic disease, absenteeism and work disability

Irene Houtman

Summary

In this chapter changes in health of workers, sickness absenteeism and work disability from the beginning of the nineties until recently will be presented. Also the costs involved and opportunities for prevention will be dealt with.

Survey and register data show that employee health and burnout are stable. Repetitive strain injuries (RSI), however, increased. After a rise during the eighties and nineties, both absenteeism and disability inflow have been decreasing. More financial incentives in the social security system and the poor economic situation were probably contributing factors to this trend.

For more than a decade musculoskeletal and mental health disorders have been the main reasons for the long-term absence and for the inflow into the disability system.

A recently extended and updated model on the societal costs of working conditions shows that the majority of the costs were related to long-term drop-out from work, resulting in disability claims. Again, two diagnoses are responsible for 83% of the cost of work-related drop-out: musculoskeletal (43%) and mental health disorders (40%). The total cost of work-related illness and prevention is estimated to be 12.7 billion euros, which is equivalent to almost 3% of the GNP.

The prevention of drop-out from work due to work-related illness is receiving a lot of attention from actors at the national, sectoral, organisational and professional level.

8.1 Organizational, technological and demographic changes

Rapid changes took place in the workplace during the past decennia. Therefore monitoring health of workers and drop-out from work due to illness is important.

First, organisational practices have changed dramatically in the new economy. To compete more effectively, it is argued that many companies have restructured themselves and downsized their workforce, increasing their reliance on non-traditional employment practices, such as using temporary and contractor-supplied labour (e.g. <http://www.eurofound.eu.int/ewco/reports/DK0408TR01/DK0408TR01.htm>), and adopting more flexible and lean production technologies (<http://www.cdc.gov/niosh/02-116pd.html>).

Second, these practices have been intensified by technological changes, particularly the full-scale introduction of the computer at the workplace as well as at home. These deve-

developments have been observed in many developed areas, such as Europe, Asia and the USA. Fears have been raised that these trends have been and will be harmful to the conditions of work and employment, and consequently to health and labour participation. Besides potential harmful effects, however, they may also provide new opportunities. Third, apart from organizational and technological changes, we can observe strong demographic changes like the greying of the work force (e.g. <http://www.eurofound.eu.int/ewco/reports/FR0407TR01/FR0407TR01.htm>), as well as an increased participation of women in the labour force (e.g. <http://agency.osha.eu.int/publications/reports/209/en/index.htm>). In general, the diversity in the workplace appears to be increasing, whereas the widening of the European borders may additionally give an extra stimulus to these developments in Europe within the near future.

In this chapter we try to present the effects of the changing workplace on the Dutch work force over the past decade. The main questions to be answered in this chapter are:

1. How do workers assess their health in relation to work since 1994²⁰? (§ 8.3)
2. What trends can be observed in occupational diseases? (§ 8.4)
3. What are the developments in absenteeism and disability benefits? (§ 8.5, 8.6)
4. What are the estimated costs of this drop-out from work? (§ 8.7)
5. What are the determinants of ill health, sickness absenteeism and disability (§ 8.8)
6. Can these costs be prevented effectively? (§ 8.9)

8.2 Data

For this chapter we use five types of information systems.

1. Since 1977 working conditions and of health have been surveyed in the 'Living Conditions Survey' by Statistics Netherlands. Since 1997 the items have been included in the Permanent Quality of Life Survey (POLS), which is an integrated system of surveys on living conditions by the Central Bureau of Statistics in the Netherlands (<http://statline.cbs.nl/StatWeb/Start.asp?lp=Search/Search&LA=EN&DM=SLEN>). The module on working conditions and health was presented to a representative sample of the Dutch workforce until 2003.
2. Since 2000 another survey has been started which is intended to be administered every two years and which has now supplied information from three representative samples of the Dutch workforce, in 2000, 2002 and 2004: the TNO Work Situation Survey (TAS): <http://www.arbeid.tno.nl/en/publications/20020625.html>. This survey focusses on more aspects of work than the surveys of Statistics Netherlands and measures most concepts with scales instead of using only one or two items, as is often done in the Living Conditions Survey. Particularly since there is not yet

²⁰ This year has been chosen because of a flaw in the working conditions part of the 'Living Conditions Survey' (POLS, CBS; see also chapter 3), and because it marks a period just after a lot of changes related to absence registration occurred due to changes in the law. Where relevant, we will also describe the period before 1994.

much trend information, the TAS will only be used to supplement the information from the Living Conditions Survey.

3. Since 1999, occupational physicians in the Netherlands have an obligation to report occupational diseases they diagnose in workers. When workers are absent for a longer period of time, it is imperative that they visit the occupational physician. Depending on the contract between the employer and this physician, this is two to six weeks after the employee reports absent from work. Not all occupational physicians report the diagnoses they make and there is no real sanction system for not reporting. Therefore the registration of occupational diseases does not provide a complete picture.
4. There are no longer valid and representative absenteeism registers in the Netherlands since employers themselves – rather than the social security system - became responsible for the payment of the salaries of personnel who report sick (since 1994). The source since then has been employer reports, obtained in interviews by the Central Bureau of Statistics in the Netherlands (www.cbs.nl). Only recently a registration from occupational health services is used to report on national absence figures, which is also to be found at the site of the Central Bureau of Statistics. In the Living Conditions Survey employees are also asked to answer the question if they have been absent during the past two months.
5. A further source of information is the 'Netherlands disability register', containing information on disability inflow, outflow and volume by diagnostic category. This register is maintained by the Social Security Administration (UWV). Since the Netherlands lacks trend information from an absenteeism register, the registration of drop-out due to disability is an important monitoring system, also to keep track of the drop-out costs of employees.

8.3 Results: self-reported health

8.3.1 Trends

About 87 % of the Dutch work force reports their health status as being good or very good (Table 8.1). On average 10% report that they have burnout because of their work. Burnout is a state of emotional exhaustion, an increasingly cynical attitude towards work and/or crumbling professional competence. These figures on health status and burnout have been quite stable since they were measured.

About a quarter of the employees report back complaints, a figure which is quite stable as well. Repetitive Strain Injury (RSI) was reported by about 19% in 1997 when it was first measured. This percentage rose steadily to 23% in 2000, when it was last measured. The questions on back complaints and RSI have not been included in the national surveys since. When the TAS started in 2000, RSI was measured as well, but differently from the way it was operationalized in the Living Conditions Survey. In the TAS the prevalence of RSI was 26% in 2000, 28% in 2002 and 28% in 2004. This data indicates a stabilisation in RSI (Heinrich & Blatter, 2005).

The percentage of workers reporting absent because of work pressure rose from 14% to 22% over the period from 1996 to 2002, while absence due to hand-arm vibrations or body vibrations rose as well from 20% to 29% over the same period, as well as contact with the family doctor which rose from 31% to 39% across this period. Absence due to physical strain, on the other hand, decreased from 24% to 20% across the period from 1996 to 2002. All these questions were not included in the POLS again since 2002. In 2003 the National Survey on Working Conditions started. There is, however, not much trend information available from this survey yet.

Table 8.1 Developments in self-reported health in Dutch workers in percentages (aged 18-65 years and working 12 hours or more per week)

Percentages (%)	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04
Reported health status											
Health status (good or very good)	86	87	86	89	88	87	87	87	87	86	87
Work-related health complaints											
Burnout (1)	x	x	x	10	8	10	8	10	9	10	11
Back complaints (2)	x	x	x	26	26	24	23	x	x	x	x
RSI (3)	x	x	x	19	16	21	23	x	x	x	x
Health effects of work pressure											
Work became 'too much' because of work pressure (% yes, last 12 months)	x	x	24	24	25	27	26	26	25	x	x
Reported absent because of work pressure -related health complaints (% yes, last 12 months)	x	x	14	15	19	21	19	21	22	x	x
Health effects of hand-arm-vibrations and body-vibrations											
Complaints because of hand-arm and body vibrations (% yes, last 12 months)	x	x	16	17	15	20	18	18	18	x	x
Reported absent because of hand-arm and body vibrations-related health complaints (% yes, last 12 months)	x	x	20	22	23	27	27	25	29	x	x
Health effects of physical strain											
Complaints because of physical strain (% yes, last 12 months)	x	x	40	41	36	43	45	43	44	x	x
Reported absent because of health complaints related to physical strain (% yes, last 12 months)	x	x	24	16	21	21	19	22	20	x	x

(1) Burnout (emotional exhaustion): percentage of workers affirmative on two of the five items

(2) Chronic and non-chronic back complaints

(3) RSI: complaints with respect to neck, shoulder, arm or hand because of work (during past 12 months)

Source: Statistics Netherlands/DLO 1994-1996; Statistics Netherlands/POLS 1997-2002; www.cbs.nl

8.3.2 Risk groups

Within the Dutch work force, we can differentiate between men and women, age groups and sectors. There is a strong gender segregation by sector (Kauppinen et al., 2003; <http://agency.osha.eu.int/publications/reports/209/en/ReportgenderEN.pdf>; see also chapter 5 of this book).

In general, it can be seen that women more often report mental health disorders, whereas men more often report musculoskeletal problems, although the gender differences in more *work-related* mental health problems like burnout, as well as in repetitive strain injuries are not so evident (e.g. Kauppinen et al., 2003; Punnett & Herbert, 2000). The gender segregation in the labour market is assumed to be largely responsible for this.

The incidence of burnout is particularly high in the education sector, but low in sectors like manufacturing, the profit service sector and the building and construction sector and is even extremely low in agriculture. Work-related problems of the neck, shoulders and arms are high in the sectors hairdressers and beauty parlours, road transport, kindergarten personnel, building & construction and in healthcare, particularly of the handicapped (Houtman & De Vroome, 2002).

8.3.3 The Netherlands compared with the EU

Compared to the average EU-worker, the Dutch worker is relatively fit and healthy, except when work-related arm and leg complaints are concerned (see Table 8.2).

Table 8.2 Work-related health in 1996 and 2000 in Europe and in the Netherlands

Aspect of work-related health	Europe		The Netherlands	
	1996	2000	1996	2000
Work-related fatigue (% yes)	19.6	22.1	11.5	19.2
Work-related stress (%yes)	28.4	28.5	19.0	24.8
Work-related back complaints (%yes)	29.6	31.5	17.4	26.1
Work-related headache (%yes)	13.8	14.9	7.9	12.1
Work-related arm and leg complaints (% yes)	9.4	16.3	11.0	19.3
Work-related absenteeism (% workers)				
never	77.1	88.9	72.6	81.6
< 5 days/year	5.9	2.7	8.2	4.8
5-9 days/year	5.2	2.0	5.7	3.1
10-19 days/year	5.9	2.1	5.5	2.6
20-75 days/year	4.7	1.9	4.8	3.9
> 75 days/year	1.1	0.7	3.0	2.7

Source: EFILWC

The most recent figures from 2000 indicate, however, that the Dutch are moving

towards the European average on many health outcomes, hereby losing their advantage in health status (Houtman, Otten & Venema, 2001). Self-reported absence in the Netherlands, on the other hand, is relatively high (relatively few report that they are 'never absent', whereas the percentage who reports longer periods of absence is consistently higher for the Netherlands).

8.4 Occupational diseases

The figures reported above are for self-reported health and sickness absence. In Table 8.3 we present the actual numbers of *diagnosed occupational* diseases based on the reports by occupational physicians. In the Netherlands it is imperative to visit an occupational physician before six weeks of absence have passed.

Table 8.3 Occupational diseases by diagnosis (percentages in brackets)

Occupational disease	1999	2000	2001	2002	2003	2004
Musculoskeletal	1831 (45)	3116 (51)	2698 (48)	2278 (43)	2333 (39)	2278 (39)
Mental health	939 (23)	1484 (24)	1517 (27)	1159 (22)	1406 (24)	1582 (27)
Hearing	805 (20)	861 (14)	735 (13)	1344 (25)	1520 (26)	1377 (16)
Skin	230 (5)	288 (5)	270 (5)	221 (4)	270 (3)	233 (4)
Nerve system	77 (2)	99 (2)	115 (2)	71 (1)	120 (2)	82 (1)
Respiratory	93 (2)	100 (2)	107 (2)	98 (2)	122 (2)	112 (2)
Other	98 (2)	115 (2)	169 (3)	164 (3)	213 (4)	124 (1)
Total	(100)	(100)	(100)	(100)	(100)	(100)

Source: NCvB, 2004, 2005

Diseases are often defined as occupational when they are present on a list of occupational diseases. These lists are different in other countries (see Roos & Sluiter, 2004). The Dutch situation is described at <http://www.occupationaldiseases.nl/index.php>. In the Netherlands between about 40 to 50% of the occupational diseases diagnosed by occupational physicians in the last 5 years concern musculoskeletal disorders, and about a quarter concern mental health disorders. These are by far the two main categories of occupational health diseases. However, we have to consider that there is a discussion in the literature as to the question whether depressive disorders should be considered to be an occupational disease (Roos & Sluiter, 2004). The large majority of the employees who receive a disability benefit because of mental health disorders are diagnosed as being depressed (Blonk, 2002). Several recent longitudinal studies show a clear causal relationship between work-related risk factors for work stress and depression, and a quarter to a third of the occupational physicians themselves consider work-related risks to be often associated with the depression that was diagnosed (Roos & Sluiter, 2004). Thus far, however, depressive disorders are not usually reported

as an occupational disease in the Netherlands.

It is clear that musculoskeletal disorders are often reported for blue collar workers. Mental health disorders are most often diagnoses reported for employees working in education (33 reports per 100,000 workers), followed by those in the transport sector (28 reports per 100,000 workers), and those in the construction sector (24 reports per 100,000 workers). Although more mental health disorders were reported by occupational physicians for workers in the healthcare sector, the relative risk of receiving a diagnosis of mental health disorder is lower in the healthcare sector than in the transport and construction sectors (healthcare: 22 per 100,000 workers). The relative risk of receiving the diagnosis of a mental health disorder when working in public administration was equal to that of the healthcare sector. (NCvB, 2003).

8.5 Trends in sickness absence

In the eighties and nineties of the last century absenteeism was a major societal problem in the Netherlands. In 1980 the national average was around 10 percent. Thus, one out of 10 employees were absent every day. Around 1990 the social partners and political parties started to feel a real sense of urgency that something had to be done. The Prime Minister said 'The Netherlands is sick!'. From 1993-1994 a policy of financial incentives for employers to manage absenteeism better was introduced by the government.

Figures indicate indeed that sick leave in the private sector started to show a decline from 1993. The legislation introduced resulted in employers having to pay their employees a salary for the first 6 to 12 weeks of sick leave (depending on company size; TZ/Arbo, 1994). Before that, reporting sickness absence of employees resulted in their salary being paid by the Social Security Administration.

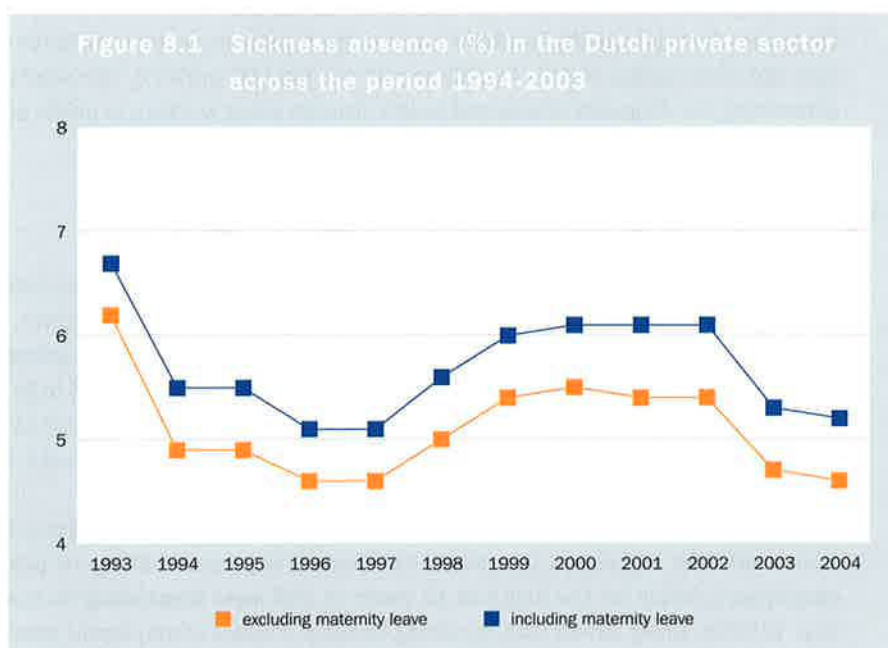
Figure 8.1 shows the development of the volume of sickness absenteeism in the private sector since 1993. The decrease in absence was explained by the Ministry as indicative of the effectiveness of the new legislation with regard to this goal. Some nuances regarding this interpretation were put forward by Houtman (1997): the new legislation also resulted in a decreased stimulus for employers to report workers on sickness absence leave, thus probably contributing to an underregistration of sickness absence.

Since 1995 employers had to pay salaries to absent workers for one whole year, a change which also ended the absenteeism registration practice that had applied to the entire Dutch work force. After the decline in absence from 1993 to 1994, sickness absence first stabilised, then rose a little to a higher level from 1998 to 2000, followed by a new period of stabilisation. Since 2002 the absence figures have been decreasing again. A comparable picture can be drawn for absence reports in the public sector, with the exception that the drop in absence was already evident in 2002.

During a period of absence, both employees and employers are obligated to promote the reintegration of the sick employee. These obligations are specified in the

Gatekeeper Improvement Act (2002). The Social Security Administration (now the Workers Insurance Authority, UWV) evaluates the reintegration efforts of the employee and the employer on the basis of a so-called 'reintegration report'. If reintegration is unsuccessful because one of the parties concerned has not fulfilled his/her obligation, the Social Security Administration may impose sanctions.

Of course, both economic prosperity and recession also have a strong effect on absenteeism.



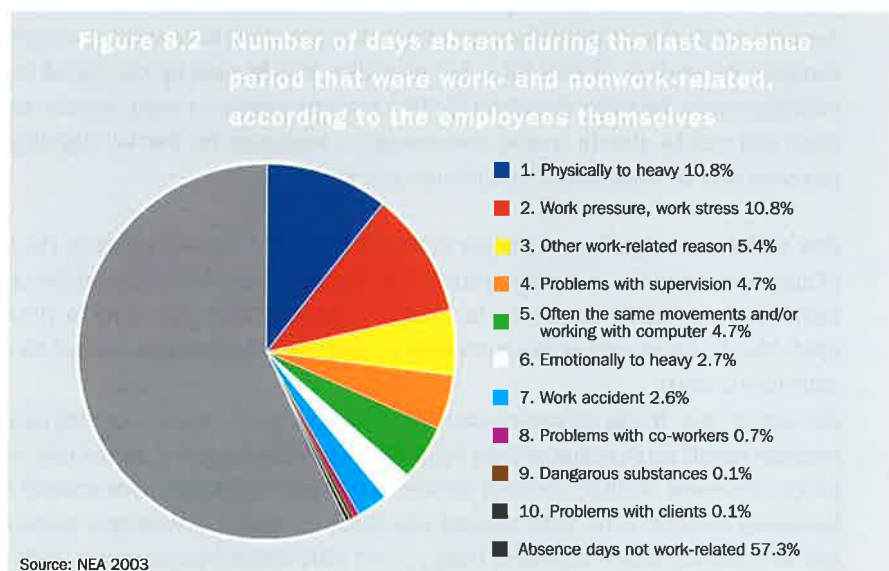
In the Netherlands, there are no regularly updated registers or any other form of monitoring sickness absenteeism by diagnosis. Information we have today on absenteeism by diagnosis comes from special studies on the causes of absenteeism, such as that presented in Table 8.4 (Kunnen et al., 1997). In this study some 51% of absenteeism was reported to be work-related.

Table 8.4 Causes of work-related sickness absenteeism lasting longer than two weeks in 1995

Reported cause of absenteeism	%
The kind of work I do	31.5
Work pressure	21.0
Conflict with supervisor, boss or colleagues	12.9
Accident at work	11.3
Restructuring, imminent dismissal	4.8
Clients, patients, pupils etc.	0.8
Other	17.7

Source: Kunnen et al., 1997

In the National Working Conditions Survey 2003, 10,000 employees were interviewed among other things about their last absence period. They were asked what the health complaints were and what the main cause had been, work-related or not. It could be concluded (Smulders, 2004) that only 25% of the absence periods were work-related, 70% were not, and of 5% of the periods the cause was not clear according to the employee. Expressed in days absent, 57,3% of all days absent were nonwork-related and 43% were work-related, see Figure 8.2.



Work pressure/workstress and physically heavy work turned out to be the major work-related causes of days absent, both with 10,8% of the absence days. As far as trends are concerned, it may be added that since 1996 a question about

absences due to high work pressure has been included in the Permanent Quality of Life Survey (POLS, CBS), which indicated that in 1996 14% of the Dutch work force who had reported absent did so due to high work pressure. This percentage rose to 22% in 2002.

8.6 Work disability

Before 2004, the Social Security Administration reviewed whether an employee was entitled to receive a benefit under the statutory Disability Benefit Act (WAO) after 52 weeks of sick leave. Since 2004 the time period has become 104 weeks (2 years). The WAO is an insurance scheme for employees who are diagnosed as being occupationally disabled. The criteria by which one is diagnosed as being occupationally disabled are subject to heavy political debate. It used to be that the disablement had to be at least 15% or more of a person's earnings capacity. Since 2005 the WAO has been replaced by the WIA (Wet Werk en Inkomen naar Vermogen, the Act Work and Income as to Capacity), implicating some major changes (e.g. social benefits only for those employees who are diagnosed as being disabled for more than 80%). The latter legislation offers an earnings-related benefit payment.

At the end of a sickness absenteeism period, the Social Security Administration assesses the individual's potential to work and determines, sometimes in collaboration with a labour expert, if they qualify for a disability benefit or for the much lower benefit provided in the case of unemployment.

A recent conclusion of the debate thus far is that one must have at least an 80% disablement for work to qualify for a full disability benefit paid by the Social Security Administration. Partially disabled (35-79%) persons remain in their current employment and will be able to receive compensation payments for partial disability. This payment may be made either by a private or a public insurer.

One of the most significant changes in the Dutch world of work refers to the inflow of employees into the disability system. The annual inflow into the disability system increased from 79,000 employees in 1994 to 118,000 in 2001, dropping to 108,000 in 2002. The disability inflow has continued to drop even further and reached 85,060 in 2003 (UWV, 2003).

For a long time, it was estimated that the total number of people receiving disability benefits would surpass one million by 2003. This did not happen, as the rate of disability inflow was strongly reduced between 2001 and the present. The relative risk of becoming disabled from 1993 onward has shown a similar downwards pattern. The risk of disability inflow increased from 1.2 per 1000 insured employees in 1994 to 1.7 per 1000 insured employees in 2001, but dropped to 1.5 per 1000 insured employees in 2002. The figures for 2003 and 2004 seem to indicate a continued reduction of disability inflow risk.

Figure 8.3 shows the disability inflow rates by diagnosis. The dip in the period around 1996-1999 is assumed to have been caused by the introduction of a new classification system for diseases (CAS-codes²¹). In the short term, this new classification system resulted in a lot of unexplained diagnoses or diagnoses that could not be fitted into the new classification.

Figure 8.3 shows that the main reasons for a person being occupationally disabled are mental health and musculoskeletal disorders.

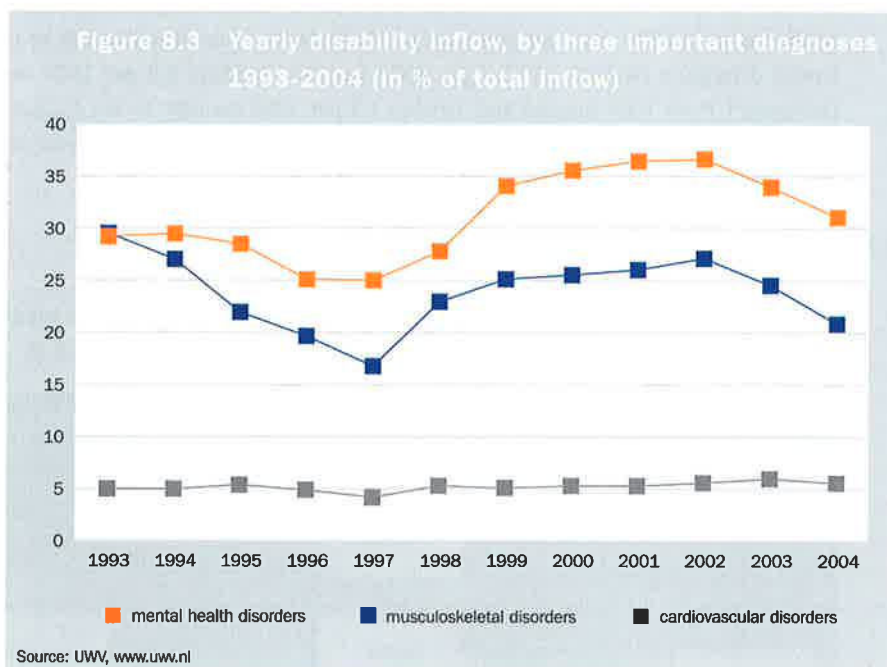


Figure 8.3 is in line with the absence statistics described earlier as far as the two main diagnoses are concerned.

It should be added that mental health disorders are still not yet fully accepted as an occupational disease. Depressive symptoms are highly prevalent in those who are diagnosed as being occupationally disabled. By definition, however, depression is not considered to be an occupational disease, whereas burnout (adjustment disorder and overstrain) and response to severe stress (Post Traumatic Stress Disorder; PTSD) are. In line with this, depression is rarely (only in 3.4% of the cases; NCvB, 2003) reported as

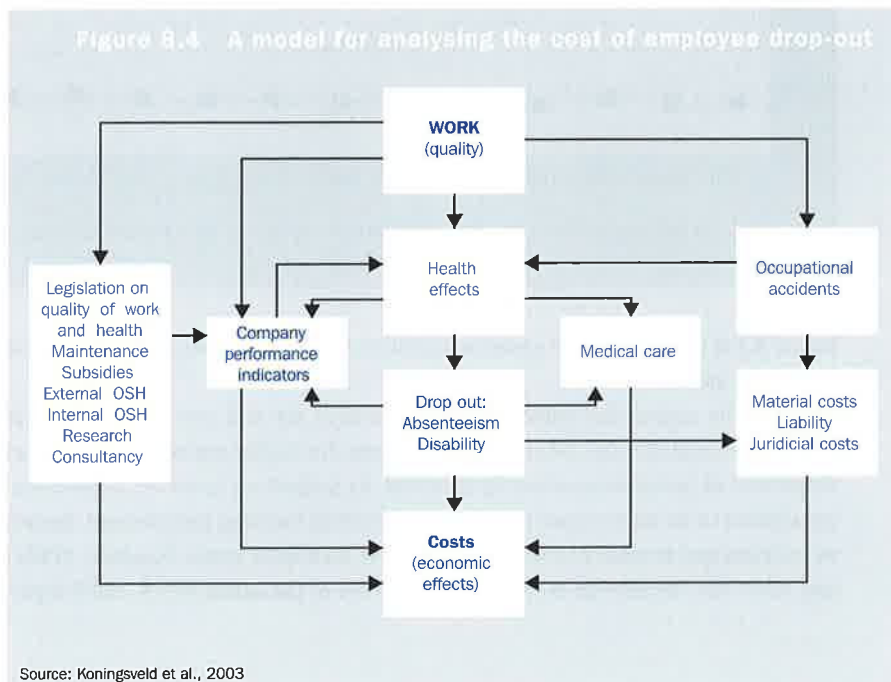
21 The Dutch Occupational Health Care system uses the CAS-code system to classify occupational diseases. This classification system is more restricted than the ICD-10 or DSM-IV, and has twelve diagnostic categories. The system is appreciated for its usability and has been endorsed as the norm by the National Union of Occupational physicians. The most important reason is probably that occupational health care deals with early stage situations, when the clinical situation of the patient is not yet clear enough to allow a highly differentiated diagnosis.

an occupational disease by the occupational physicians.

Recently, a comparison of disability inflow figures was carried out among four EU countries. This comparison was part of a document on 'mental health disability' for a committee that was installed to advise the Ministry of Social Affairs and Employment and the Ministry of Health in the Netherlands. Disability figures from the Netherlands were compared with those from Sweden, Germany and Belgium (Veerman et al., 2001). It was concluded that the inflow into the disability system was generally high in the Netherlands in 1998, but that this was particularly true for disability due to mental health disorders: Netherlands 5.2 per 1000 insured, Belgium 2.2 per 1000 insured, Germany 1.7 per 1000 insured and Sweden 1.5 per 1000 insured. In the Netherlands, the risk of being diagnosed as disabled due to a mental health disorder was particularly high for working women in the age range 25-34.

8.7 Costs of absenteeism and work disability

The societal costs of absenteeism and disability were calculated for 2001. A model was constructed as a tool to operationalise the relevant indicators (see Figure .8.4).



The basis of the model is the idea that the work of the individual worker results in the delivery of products, and adds to the productivity of the organisation as a whole (see also <http://www.eurofound.eu.int/ewco/2004/12/NL0412NU01.htm>).

Unfavourable working conditions (upper part of Figure 8.4) may result in ill health or in accidents which in turn may bring about employee drop-out and may need medical care leading to increased costs (lower part of Figure 8.4). Preventive measures (OSH-legislation, Labour Inspectorate maintenance, subsidies, OSH activities, research and consultancy, left part of Figure 8.4) also carry a cost.

In the Netherlands, Koningsveld et al. (2003) calculated that these costs are € 12,7 billion in total a year. In Table 8.5 it is shown that the largest costs are related to work-related sickness absenteeism and work-related disability, namely 3.7 and 3.2 billion Euro a year.

Table 8.5 also shows that the largest costs of employee drop-out are due to mental health and musculoskeletal disorders.

Table 8.5 Diagnostic category and the costs of absenteeism and disability

ICD-9 diagnostic category	Share of absenteeism (in %)	Workrelated share of all absenteeism (in %)*	Costs of workrelated absenteeism (in million euro)	Share of disability (in %)	Workrelated share of all disability (in %)	Costs of workrelated benefits (in million euro)
Infectious and contagious diseases	1.6	0.1	8	1.6	0.1	6
Neoplasms	2.5	0.2	25	2.5	0.2	19
Endocrine diseases	0.8	<0.1	3	1.2	<0.1	3
Blood diseases	0.3	<0.1	1	0.4	<0.1	1
Psychosocial disorders	28.7	11.5	1,444	40.2	17.7	1,630
Neurological diseases	3.1	0.5	59	5.7	1.6	148
Cardiovascular diseases	4.6	0.9	116	6.8	1.8	169
Respiratory diseases	2.3	0.3	43	2.1	1.0	89
Digestive diseases	2.9	0.1	11	2.1	0.1	6
Urogenital diseases	2.4	0.1	9	1.1	<0.1	3
Pregnancy related disorders	7.1	0.1	18	0.6	<0.1	2
Skin diseases	0.9	0.2	28	0.6	0.3	31
Musculoskeletal disorders	32.7	14.7	1,854	28.9	11.6	1,065
Congenital diseases	0.2	0	-	0.5	0.0	0
Accidents at work	1.0	1.0	135	0.6	0.6	55
Other accidents	9.0	0	-	5.0	0.0	0
Total	100	29.8	3,754	99.9	35.0	3,227

Note: work-relatedness based on Gründemann & Nijboer, 1998.

* Share multiplied by work-related fraction (Koningsveld et al., 2004). Source: Koningsveld et al., 2003

Costs for OSH-legislation, Labour Inspectorate maintenance, subsidies, OSH activities, etc. total around 5.7 billion Euro. This implies that the total costs of work-related

illness and prevention are about € 12.7 billion a year, which is equivalent to almost 3 % of the GNP. Thus, both absenteeism and disability due to psychosocial and musculo-skeletal disorders are a major economic problem in Dutch society.

8.8 Determinants of ill health, sickness absenteeism and disability

Two trends may be distinguished with regard to demographic characteristics in the Dutch work force:

- The increasing labour participation of women (see also Chapter 5 of this book)
- The increasing age of the Dutch work force due to the ageing process, and the reduced inflow of young workers into the labour market (see also Chapter 5).

National trends in working conditions (see Chapter 3 of this book) can be characterized as:

- A continuous rise in work pace over the period 1977-1997. It has levelled off since then. The rise in work pace has been interpreted as a sign of the continuous intensification of work in the Netherlands. The country ranks second highest for work pace within Europe (European Foundation, 2000)
- Less time is available for non-work activities (Breedveld & Van den Broek, 2004)
- The combined effect of both trends has increasingly negative effects on the work-home interface.

National trends in company characteristics are:

- The economic situation has worsened in the beginning of this century and the Netherlands was experiencing a recession until 2006. Although a recession may have negative effects on occupational healthcare arrangements and funding, the short-term effect appears to be a reduction in sickness absenteeism and disability figures
- All companies are required to have a contract with an occupational health service. Companies are, however, not fully satisfied with the quality of the service, although the quality seems to be improving. Research on performance criteria is actively supported by a research programme on 'mental fatigue at work'
- Changed legislation, intended to stimulate both the employer and employee to be active in the work resumption process.

In sum, intensification of work increased, time available outside work became increasingly sparse, participation of women in the labour market increased, and combining work and family life is becoming increasingly important for work in the Netherlands. Evidently, the combination of these trends may raise concerns, especially since the disability inflow of women in the age range 25 to 34 is extremely high.

The ageing work force is also likely to have implications for the organisation of work. Keeping older workers at work requires flexible arrangements involving working fewer hours, setting aside time to be used as additional time off etc.

In 2006 the Netherlands is slowly going from economic decline to economic growth. It

is difficult to predict what the effects of this change will be. A reduction in absenteeism and disability inflow is often associated with a declining economic situation. Will there be a rise in absenteeism and disability again when the economy gets better?

8.9 Measures to reduce long-term absenteeism and disability inflow due to mental health & musculoskeletal disorders

In this section we will address several types of measures that are or could be taken to reduce long-term absenteeism and disability inflow due to mental health disorders and musculoskeletal disorders. We can rank them according to the level at which they address the problems. From macro to micro these levels are the national level, the sectoral level, the organisational level and the level of the individual worker.

8.9.1 National level: reforms and policy programmes to reduce sickness absenteeism and disability

The high number of disabled persons (> 1 year absenteeism) and persons on sick leave (< 1 year), in the late 1990s, particularly in relation to mental health and musculoskeletal disorders, stimulated amongst other things a process of reorganisation of the sickness and disability schemes. The government concluded that these high numbers were caused by employees and employers jointly shifting the responsibility to collective insurance arrangements. The solution was to assign responsibility from the social security institute administering the statutory social insurance to employers and employees in individual companies.

Nowadays, the employer pays a minimum of 70% of the salary during the first two years of sickness. This period was extended to two years as of 1 January 2004. The assumption is that the employer will have an interest in the early reintegration of the absent employee in order to lower the costs of sickness absenteeism. Since 2003, the employer's responsibility for reintegration has been extended so that if it is not possible to reintegrate employees in their own company, employers must seek to reintegrate them in another company. This is a two-year responsibility and equal in length to the period of statutory protection for dismissal. Furthermore, employers are encouraged to employ disabled individuals.

Since January 2004, two years of persistent sickness absenteeism means that the employee may apply for a disability benefit from the statutory disability insurance provider. The right is conditional on efforts by the employer to integrate the employee (under new legislation introduced in 2002). Both the employer and the employee must make all reasonable effort to have the employee resume work within this period. If one of the parties concerned does not fulfil this obligation according to the judgement of the Social Security Administration, the Administration has to impose sanctions. If the employer does not fulfil his obligation to integrate, the obligation to pay salary

will be prolonged (by a maximum of one additional year). If the employee does not cooperate, his/her disability benefit may be disallowed.

Additional reforms of the disability legislation are pending. Discussions on this topic are extremely intense, both at the political level, among the social partners and in the media. From 2006 onwards the current disability regulation will be split up into regulations for the fully disabled (who have lost more than 80% of their earnings capacity) and those partially disabled (who have lost 35-80% of their earnings capacity). The latter group remains employed part-time (or will be partly unemployed) and receives a benefit for the part they are disabled. In contrast to the fully disabled worker who receives a public disability benefit, the benefit for the partially disabled worker has to come from a private insurance provider.

Additionally, the employer is not obliged to call in the help from the so-called occupational health and safety services for assistance. These are private, competing companies that provide professional assistance on the basis of the European Framework Directive 89/391 on safety and health at work.²² Although a contract with such a service was obligatory in the past, it is now optional and will remain so in the near future.

Reforms regarding policies and guidelines on mental health diseases and disorders

In 2002 a committee (Donner I) was established to advise on the question of disablement due to mental health disorders. This committee came up with a guideline about how to prevent and reintegrate people with mental health disorders. The main points of this guideline were that (1) the employer and employee have principal responsibility for taking action in the case of absenteeism due to mental health problems, (2) professional help (e.g. the occupational physician) should be called in for advice at an early stage (within 2-4 weeks of absenteeism), and (3) work itself is the best medicine and the employee should start working (part-time and/or with a reduced workload if so indicated) as soon as possible. At present, this guideline is being implemented in several sectors. An initial process evaluation of this implementation was recently carried out with quite positive results (Van den Heuvel et al., 2004).

Other temporary advisory Committees on reintegration

The Ministry of Social Affairs and Employment created a new committee on 'The Working Perspective' (Het werkend perspectief) that stimulates policies and activities contributing to a reduction of sickness absenteeism and a reduction of individuals receiving disability benefits. Members come from employers' and employees' organisations, patient/client organisations and other institutions involved in absenteeism and disability, such as insurance companies, the Social Security Administration, Occupational Health and Safety Services and the social services.

²² The Dutch government interpreted the regulation 89/391 differently from most countries.

The committee aims to reduce the number of people entering the disability benefit system by promoting a positive and realistic image among employers and employees about individuals who are (partially) incapacitated for work. The committee also aims to improve the knowledge of employers, employees and advisors about sickness prevention, treatment, and reintegration. Particular attention is to be drawn to specific target groups, such as young and chronically ill persons. Finally, the committee aims to change the behaviour of employers, employees and their advisors towards individuals who are (partially) incapacitated for work. A sub-committee concentrates on the prevention of disability for work due to mental health problems. This committee was in fact a continuation of the former Donner Committee.

8.9.2 Covenants on Health and Safety at Work

In order to stimulate the prevention of sickness absenteeism and disability, the Ministry of Social Affairs and Employment actively encourages and financially supports the arrangement of Covenants on Health and Safety at Work (Arboconvenanten). Although the policy of covenants is a national one, it is implemented sector wise. Covenants on Health and Safety at Work are in fact *sectoral* agreements that relate to the quality of work and reintegration of absent employees. Special attention is given to preventing high work pressure, mental health problems as well as physical load and musculoskeletal problems. Fifty per cent of all costs of the covenant and the measures agreed to be implemented at sectoral level, are reimbursed by the Dutch Ministry of Social Affairs and Employment. The covenants may become of great importance in lowering occupational risks for employees. Since these covenants were started up at the end of the last decade and will continue to run for several years, their effectiveness has only been evaluated globally, indicating a 9% decrease in absence in those sectors that had agreed on covenants on health and safety at work (Veerman et al., 2004). It should, however, be borne in mind that these covenants were purposely presented to those sectors that were 'high risk', either because of their exposure to specific risks, or because of high long-term absenteeism and disability inflow figures due to mental health or musculoskeletal disorders. Part of the reported effect on absence may therefore be due to a 'regression to the mean' effect.

8.9.3 Prevention at the level of the organisation or the individual

In general, workplace interventions are carried out more often when ergonomic interventions or organisational interventions directed at the prevention of musculoskeletal problems are concerned, as compared to (particularly organisational) measures aimed at reducing psychosocial risks at work and mental health outcomes (Houtman et al., 1998 a and b). Organisational measures were taken particularly infrequently (Houtman et al., 1998 b).

In two recent theses (Anema, 2004; Steenstra, 2004), the effectiveness of a clinical intervention (graded activity) was compared to the effectiveness of (ergonomic)

work place interventions in managing low back pain. Low back pain is the most frequent reason for receiving a disability benefit because of musculoskeletal disorders. In several controlled trials the (ergonomic) workplace interventions did result in an accelerated return to work as compared to the usual care, whereas the clinical intervention did not. One has to keep in mind, though, that the workplace interventions were administered when workers were still absent at 2-6 weeks, whereas the graded activity was administered when workers were still absent at 8 weeks. Both intervention groups as well as the (usual care) control group were followed for 52 weeks after the first day of their sick leave.

In most reviews on work stress interventions (e.g. Semmer, 2003) it is concluded that the majority of the *research* on the effectiveness of work stress interventions focuses on individually directed interventions, which mainly aim at adapting individuals to their environment. Reasons behind this orientation are:

1. Management itself often has the opinion that work stress problems are based on individual factors, particularly on the inability of certain individuals to cope with the work demands imposed upon them.
2. It is much easier to study the effect of interventions in an experimentally proper way when an individual, rather than an organisation, or even a part of it, is the target of the intervention study. Issues like randomisation, follow-up of a control group, restricting the intervention to the experimental group only, and avoiding other changes than just the experimental ones are much easier at the level of individuals than at the level of (parts of) the organisation. Some prominent researchers even consider a randomised clinical trial invalid when it focuses on the complexity at organisational level (e.g. Griffiths, 1999; Kristensen, 2000).

When considering the outcomes of the studies presented by Van den Bossche et al. (2004), the studies targeting individuals not only showed more consistent and positive results than those dealing with organisations, generally they were also of a better quality. The latter finding in particular may be due to the fact that - as stated above - it has generally been found quite difficult to set up a well-controlled randomised intervention study at the organisational level. This is clearly illustrated, for example, by the review by Landsbergis et al. (1999) which refers to the large amount of 'grey' documentation on the effectiveness of organisational interventions. It has also become a kind of accepted trend to present and publish well documented case studies (e.g. Karasek, 1992; Kompier & Cooper, 1999; Kompier et al., 2000). Several researchers even see this as a better way to evaluate the implementation of organisational measures, since it is only by a combination of quantitative and qualitative (process) perspectives that one can determine if 'the patient really took the pill', and 'the active ingredient was present' (e.g. Griffiths, 1999; Kompier & Kristensen, 2001).

At present one has to conclude that there is little research on the effectiveness of organisational interventions and the research available tends to be quite inconclusive.

Few studies consider the fact whether the ‘pill has been taken’, and research even suggests that organisational interventions often do not change the exposure to organisational risks (Houtman et al., 2003) or result in a negative change (e.g. Landsbergis et al., 1999).

Regarding the effectiveness of *individual* interventions which are often performed by professionals, by the occupational physician (OHP) or the general practitioner (GP), a lot of new information is available. This is partly due to the Dutch Research Programme on Fatigue at Work (NWO-PVA). A meta-analysis was first conducted within the framework of this programme, which aimed at identifying the most effective interventions. The cognitive therapy approach appeared to be most effective on the basis of the studies performed thus far (Van der Klink et al., 2001). All of the intervention studies performed within this research programme started out from a very practical and to some extent even unique ‘Dutch’ situation, since the occupational physician, by law, has a central role in coordinating the ‘social medical guidance’ when the employee has reported absent due to sickness. Guided by the results of the meta-analysis and principles, several interventions using cognitive behavioural principles were devised, implemented and evaluated. Besides the reduction of (mental) health complaints, RTW (return to work) was a central goal. All interventions appeared to speed up the RTW process but the reduction of (mental) health complaints was as quick and sizable as in the control groups (see Croon et al., 2005).

8.10 Conclusions

To summarise the main conclusions that can be drawn from the information presented, we can state:

- Absenteeism and disability figures have been rising during the last decade. Only recently has there been a decrease, together with a change in the national economic situation.
- Mental health problems as well as musculoskeletal health problems are a major problem in the Netherlands and are a major reason for absenteeism and disability in this country.
- The Government is actively involved in a variety of ways aiming to prevent the long-term drop-out of workers. Work retention is an important issue. In order to keep older workers, female workers or other groups of workers who are potentially at risk for long-term absence participating in the work force, a large variety of measures is needed that probably need to go beyond preventing drop-out from work due to ill health. The latter will, of course, be necessary as well. Measures taken thus far are concerned with:
 - Changing legislation, aiming at increasing efforts for both employers and employees to return to work after reporting sick. Disability benefits recently are only available to those who have become fully disabled. The partially disabled

will have to stay employed (or become unemployed) and will be compensated through private insurance schemes for their partial disablement. Other legislative measures have been taken including the Gate Keeper Law, which proactively creates additional obligations for employers and employees regarding work resumption after 6 weeks of absenteeism.

- The 'Covenants on work and health' have been introduced and financially supported to stimulate primary prevention at the sectoral level. The first attempts to evaluate the effectiveness of these covenants appear to be positive.
- Guidelines issued by the first Donner Committee have been prepared and are being disseminated. An initial process evaluation indicates that they are practical guidelines which may initiate preventive measures at the sectoral and organisational level, and which are perceived as being helpful in preventing absenteeism due to mental health problems.
- Research and, in particular, a large research program on mental fatigue has helped to gain more insight into the process of fatigue and its short and long-term effects. Above all, it has resulted in valid instruments and clinically effective management of mental diseases and disorders as well as a reduction in days absent due to these mental health problems. Graded and participated intervention programmes to stimulate RTW in the case of absence due to musculoskeletal problems, appear to be effective as well. More studies, particularly directed at the further implementation of acquired knowledge, would appear to be necessary.

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Chapter 9

Occupational accidents

Jan Popma & Anita Venema*

Summary

This chapter deals with occupational accidents in the Netherlands. Paragraph 9.2 briefly describes the statutory regulations surrounding accidents at work in the Netherlands. This includes the obligation to keep a serious accident register together with a risk assessment report. Paragraph 9.3 draws a statistical picture of the number and relative severity of occupational accidents in the Netherlands and depicts some of the effects they entail. The paragraph contains data on fatal accidents, accidents resulting in hospital admission and accidents resulting in absence from work. All indicators show a declining trend between 2000 and 2004. In paragraph 9.4, we endeavour to elucidate on some of the backgrounds that may have an effect on the number of accidents at work. This includes data on primary mechanisms and causal factors, but also the relation between flexible work, work pressure, fatigue and occupational accidents is explored. In paragraph 9.5, finally, we turn to both government policy and company measures to reduce the number of accidents. Safety culture and risk awareness are two elements in the “Strengthening Occupational Safety” program that the Dutch government has launched to improve occupational safety.

9.1 Introduction

Even if, in the so-called Established Market Economies, no more than some 5% of all fatalities contributable to work can be attributed to accidents (ILO, 2002), these occupational accidents have for a long time held the limelight in OHS policy. The same holds for the Netherlands: whereas an average of 100 employees die due to occupational accidents, the Dutch Centre of Occupational Diseases estimates a tenfold number of fatal diseases each year. This focus on accidents rather than on occupational diseases may be explained by the insidious character of many occupational diseases. Accidents are simply of a more visible nature.

Still, any number of fatal accidents obviously merits particular attention being paid to accidents at work. Occupational accidents not only strike the victims themselves, they also affect their families, friends and colleagues. A secondary matter, though not unimportant, is that accidents at work cause damage to business²³ as well as to society at large.

23 In the year 2000, about 210 million days were lost due to accidents at work in the EU-15. Eurostat, 2004, p.27

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9.2 Dutch regulations concerning occupational accidents

For a long time, Dutch OHS regulations almost exclusively focussed on occupational accidents. One of the first pieces of OHS legislation, the *Veiligheidswet 1895* (1895 Safety Act), was devised mainly in response to the steeply rising number of accidents during the last quarter of the 19th century. It was not until 1983 that the *Veiligheidswet* was replaced by the Working Conditions Act (WCA), which put occupational health and well-being on the same level as workplace safety. The Working Conditions Act was thoroughly revised in 1994, introducing the obligation to be in possession of an assessment of the occupational risks to safety and health (cf. chapter 9.3). In 1998 the WCA was slightly amended, introducing the instrument of administrative fines for non compliance with minor obligations.

The Working Conditions Act contains a general duty to “organise the work in such a way that it does not have any adverse effect on the safety and health of the employee” (art. 3 WCA 1998). This obviously implies a duty to prevent accidents at work. The WCA also provides a framework for the *Arbeidsomstandighedenbesluit* (1997 Working Conditions Decree), that contains more specific regulations concerning the organisation of workplaces (for example marking hazardous areas, prevention of the dangers of falling or moving objects and safety while working on electrical installations).

With regard to occupational accidents specifically, article 9 of the WCA states that “if an employee suffers an accident in relation to carrying out work that results in serious physical or mental injury or death”, the employer shall immediately notify the Labour Inspectorate. A ‘serious physical or mental injury’ is understood to mean “damage to the employee’s health, which leads to hospital admission for observation or treatment within 24 hours after occurrence of the accident, or which can reasonably be judged to be permanent.” Moreover, article 5 states that the employer is obliged to keep a list of all occupational accidents resulting in a worker being unfit for work or facing “virtually immediate death”. This obligation was introduced into the Dutch WCA in order to comply with article 9 of EU Framework Directive 89/391/EEC.²⁴ The register is to be included in the statutory risk assessment. At first glance, this may appear strange. The assessment is supposed to address *risks*, hence probable *future* flaws in workplace safety. Actual accidents, by definition, are not risks. Still, the idea is that by including the accidents in the risk assessment, this may incite *learning* in the organisation. Employers should take measures to prevent the accident from recurring. This noble aspiration, however, is seldom achieved (also see 9.5).

24 Note that this obligation exceeds article 9 of the Framework Directive 89/391, which imposes on the employer the obligation to keep a list of occupational accidents resulting in a worker being unfit for work for more than three working days. The closely connected obligation “to draw up reports on occupational accidents suffered by his workers for the responsible authorities” (article 9, 1(d) Framework Directive) is transposed into an appendix to the Working Conditions Regulation.

9.3 Accidents at work: facts and figures

Until recently the figures available in the Netherlands were renowned for their unreliability. In the Netherlands no notification of an occupational accident to an insurance body is required. Insurance based systems, which can be found in 10 EU member states, have reporting procedures based mainly on the notification of the accidents to insurance companies, which spurs the companies to report (Eurostat 2001, p.23). The legal obligation to report all 'serious' accidents to the Labour Inspectorate should theoretically lead to a perfect registration of accidents at work - at least of those accidents entailing severe injuries or death. However, this obligation to report accidents is often evaded, especially in the case of non-fatal accidents, requiring hospital admission and/or resulting in permanent injury (see also Dupré, 2001). Finally, the data collected on occupational accidents by other instances differs in the way it is collected, the target population, the definitions and classifications used. Therefore they cannot easily be integrated into one set of key figures (Venema, Bloemhoff, Ybema & Vroome, 2004). These methodological gaps were bridged by means of a project called the *Monitor Arbeidsongevallen* (Occupational Accidents Monitor) conducted by TNO and the Consumer Safety Institute. Until now this project has resulted in the publication on a yearly basis of the Occupational Accidents Monitor with data on fatal accidents, accidents requiring hospitalization and accidents resulting in absence from work for the years 2002, 2003 and 2004 (Venema & Bloemhoff, 2004, 2005 and 2006).²⁵

9.3.1 Fatal accidents

The most recent figures concerning *fatal* accidents among workers (including employees, the self employed and also including traffic accidents while working) were reported in the *Monitor Arbeidsongevallen* 2004. In 2004 83 workers died following an occupational accident. For a working population of about 8 million, this implies an incidence rate of 1.1 per 100,000 employees. The incidence rates between 2000 and 2004 show a statistically significant declining trend in fatal occupational accidents in The Netherlands. In Europe this declining trend can also be seen (see Table 9.1). The Netherlands performs better than average in Europe, ranking third after Sweden and the UK (Eurostat, 2003). The Eurostat data in Table 9.1 differs from the Dutch calculations, as Eurostat has included only nine "main" sectors in its statistics, excluding some of the 'low-risk' sectors (Eurostat, 2003).

25 The *Monitor Arbeidsongevallen* (Occupational Accidents Monitor) combines input from the Dutch Labour Inspectorate and Statistics Netherlands concerning fatal accidents, the *Letsel Informatie Systeem* (Injury Information System) containing data on accidents resulting in hospitalisation and data from the Dutch Labour Force Survey on accidents resulting in absence from work.

Table 9.1 Fatal accidents at work in the EU (incidence rate per 100,000 workers)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
EU (15 countries) *)	3.9	3.7	3.6	3.4	3.4	2.9	2.8	2.7	2.5		
Euro zone *)	4.6	4.2	4.1	3.8	4.0	3.3	3.2	3.1	2.9		
Netherlands *)				3.0		2.3	2.3	1.7	1.9		
Netherlands **)				1.7	1.4	1.5	1.5	1.2	1.0	1.0	
Netherlands ***)							1.5	1.5	1.2	1.3	1.1

Source:

*) = <http://epp.eurostat.ec.eu.int> (9 main sectors and excluding traffic accidents during work)

**) = Leertouwer et al. 2003, Leertouwer 2002 & Martens 2001 (all sectors and excluding the self employed and traffic accidents during work)

***) = Venema & Bloemhoff 2004 - 2006 (all sectors and including the self employed and traffic accidents during work)

9.3.2 Non-fatal accidents

In the *Monitor Arbeidsongevallen* two types of non-fatal accidents are considered. A distinction is made between accidents resulting in hospital admission and accidents resulting in absence from work for at least one day. In 2004 3,200²⁶ workers were hospitalized after an occupational accident (40 per 100,000 workers) and 85,000 were absent from work (1,100 per 100,000 workers). Both indicators for non-fatal accidents show a statistically declining trend between the years 2000 and 2004.

²⁶ The fact that in the annual reports of the Dutch Labour Inspectorate the number of 'serious accidents' is no more than about 1600 clearly indicates that the statutory obligations in this respect are grossly evaded.

Table 9.2 Accidents at work in the Netherlands by gender and age
(incidence rate per 100,000 workers)

	Fatal accidents	Hospital admissions	At least one day absence from work
Total (average)	1.1	41	1,100
Male	1.8	66	1,500
Female	0.12	10	600
15-19	0.66	28	1,100
20-24	0.43	45	1,800
25-29	0.72	34	1,500
30-34	0.88	44	1,300
35-39	0.65	34	960
40-44	1.0	42	930
45-49	1.1	41	910
50-54	1.1	47	700
55-59	1.7	38	760
60-64	4.3	41	690
65+	5.0	200	170

Source: Monitor Arbeidsongevallen 2004 (including the self-employed and traffic accidents during work) accidents.

Accidents are not equally distributed among the working population though. Some categories of workers are well known 'high-risk' groups: men, young and inexperienced workers, as well as agricultural, industrial, transport and construction workers. The *Monitor Arbeidsongevallen* clearly corroborates the existence of these 'black spots' in occupational safety. With regard to age, it is clear that those employees aged between 20-25 are more prone to accidents, but that older workers are at risk because of the more serious outcomes.

Compared to other EU countries, the Netherlands is doing remarkably well with regard to non-fatal accidents (see Table 9.3). Only in Manufacturing and Financial Services are the most recent figures unfavourable.

Table 9.3 Accidents at work with more than three days' absence
(incidence rate per 100,000 workers)

	1995	1996	1997	1998	1999	2000	2001
Agriculture, hunting and forestry							
EU15	6123	6771	6647	6790	7060	6625	6159
NL	7561	7827	7993	7079	7133	5754	2837
NL/EU 15	1.23	1.16	1.2	1.04	1.01	0.87	0.46
Manufacturing							
EU15	4962	4660	4607	4492	4471	4421	4298
NL	5833	5895	5857	5628	5741	5714	5463
NL/EU 15	1.18	1.27	1.27	1.25	1.28	1.29	1.27
Electricity, gas and water supply							
EU15	1545	1619	1662	1625	1423	1513	1374
NL	482	542	535	516	496	496	496
NL/EU 15	0.31	0.33	0.32	0.32	0.35	0.33	0.36
Construction							
EU15	9080	8023	7963	8008	7809	7548	7247
NL	2650	2603	2525	2499	2721	2777	2380
NL/EU 15	0.29	0.32	0.32	0.31	0.35	0.37	0.33
Wholesale and retail trade							
EU15	2523	2431	2394	2451	2496	2524	2438
NL	2430	2405	2368	2222	2469	2336	2077
NL/EU 15	0.96	0.99	0.99	0.91	0.99	0.93	0.85
Hotels and restaurants							
EU15	3645	3532	3365	3590	3711	3790	3551
NL	1732	1922	1760	1615	1730	1604	1384
NL/EU 15	0.48	0.54	0.52	0.45	0.47	0.42	0.39
Transport, storage and communication							
EU15	5790	6018	5937	5862	5702	5512	5162
NL	3298	3244	3293	3055	3179	3268	2796
NL/EU 15	0.57	0.54	0.55	0.52	0.56	0.59	0.54
Financial services							
EU15	1627	1582	1602	1623	1790	1815	1767
NL	5290	5206	4873	4269	5400	5328	4532
NL/EU 15	3.25	3.29	3.04	2.63	3.02	2.94	2.56

Sources: * = <http://epp.eurostat.ec.eu.int> (9 main sectors and excluding traffic accidents during work)

Still, even if the Netherlands can boast a better than average track record, the problem is serious enough. Somewhat less than 100 fatalities and almost 100,000 injured on average each year is in itself a burden the victims and their relatives have to

bear. But besides that, there is also the societal costs such as claims made under the Disablement Insurance Act (*WAO*) and demands on health-care. Furthermore, there are various direct and indirect costs to the companies involved.

Still there is little reliable data on these costs. At company level, however, TNO Work & Employment has been developing an instrument to assess the costs of workplace accidents. Various costs may be discerned, such as (Mossink, 2002):

- absenteeism and sick leave
- loss of production and other business upsets
- material damages
- liability claims
- high-risk insurance premiums
- administrative burden
- legal sanctions (fines and other penalties)
- management time (investigation into the accident, damage control)
- personnel turnover due to workers being discontent about their poor working conditions
- intangible damages (damage to reputation and image)

A recent cost assessment is based on accident scenarios which review most, albeit not all, of the aforementioned costs. The estimates range from € 250 for accidents with no more than one day lost to well over € 400,000 for serious accidents with lasting incapacitation and a successful tort claim (Venema & Bloemhoff 2004, p.28). These costs relate to the company level only. Estimates about the external costs, such as the costs of public health care or loss of income for the worker, are also hampered by unreliable data. In this respect too, however, work is being done. The *Stichting Consument en Veiligheid* (Consumer Safety Institute) is presently elaborating indicators (Meerding et al., 2000). A rough estimate of the direct cost of work-related first aid at hospitals was € 42 million in 2001. The proportion of disablement due to accidents at work may be calculated off the cuff, using statistics from claims made to the Disablement Insurance Act (*WAO*). Of all the disabled employees, 5.4% have the diagnosis 'injury' (UWV, 2004-a). Some 10% of the most serious injuries being work-related (RIVM, 2004), one may conclude that 0.5% of all *WAO*-benefits may be attributed to accidents at the work place - hence, over € 50 million (UWV, 2004-b). But once again, these figures are very rough and more work is to be done in this field.

Other costs, notably material and immaterial costs of accidents are even more difficult to calculate. There are various estimates extrapolating serious accidents at work to accidents with property damage. The so called Bird ratio, for example, multiplies 'disabling injuries' by 500 to arrive at a figure for property damage (for a critical review cf. Hale 2002, Groeneweg 2002). A recent exploratory study by TNO (see Venema & Bloemhoff, 2005) revealed that material and immaterial costs of occupational acci-

dents may easily mount up to 1 million euros.

9.4 Determinants of accidents at work

Despite all methodological problems in the field of research, the effects of accidents at work are nonetheless quite unequivocal. The number of occupational accidents remains high, even if they have dropped gradually over the last few years. Also, it is clear that workplace accidents entail serious damages - both physical and psychological as well as financial.

More interesting, though, is attaining insight into the mechanisms that lead to occupational accidents. In this paragraph, clarification of the determinants of accidents is undertaken - starting with the simplest of indicators: the primary mechanism leading to the accident. Next, some secondary explanations are invoked.

9.4.1 Primary mechanisms and causal factors

Of all primary mechanisms, three main risks head the list: falling from heights, getting trapped or squeezed by heavy loads and getting struck by moving or falling objects (see Table 9.4). This detailed data on how accidents actually occurred was obtained from the Labour Inspectorate (Martens, 2001; Leertouwer et al., 2003)

Table 9.4 Occupational accidents in the Netherlands by primary mechanism

	Fatal		Severe	
	N	%	N	%
Trapped or squeezed by heavy load or object	164	36	410	13
Falling	148	33	1500	46
Struck by moving or falling object	81	18	550	17
Contact with electricity	17	4	30	1
Suffocation	20	4		
Chemical exposure	10	2	70	2
Thermal exposure	7	2	70	2
Contact with cutting, pointed or abrasive objects	3	1	400	12
Bitten/kicked etc. by human or animal	0	0	130	4
Other			100	3
Total	450	100	3270	100

Note: Calculated on the basis of Leertouwer et al. 2003 and Martens 2001 (excluding the self-employed and traffic accidents during work).

More interesting, however, are the causes that have led these mechanisms to occur in the first place (see Table 9.5). Obviously, the fact that people are working at elevated places increases the risk of falling. Likewise, working with electrical equipment incre-

ases the chance of being electrocuted. Still, not all potentially harmful activities result in accidents. In 2001 and 2003, the Labour Inspectorate analysed over 3,500 serious accidents and revealed the following causal mechanisms (note, however, that working on moving machinery is of a different order than the other mechanisms).

Table 9.5 Causes of serious accidents at work in the Netherlands

	%
Not properly securing the worker	26%
Working on/at moving machinery	11%
Improper use of materials/substances	10%
Improper positioning or loading of materials	8%
Faulty machinery	5%
Improper use of personal protective equipment	3%
Disconnecting safety devices	3%
Total (relative)	66%
Other	34%

Note: Calculated on the basis of Leertouwer 2003 and Martens 2001 (excluding self-employed and traffic accidents during work).

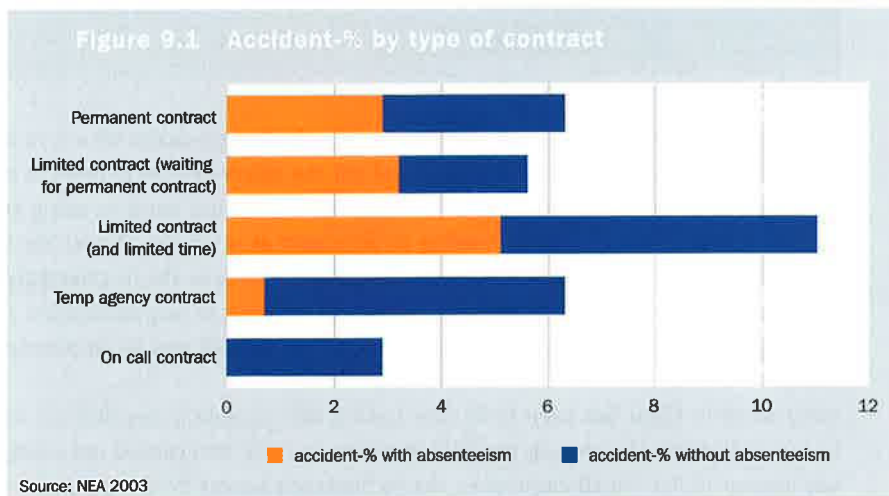
These causes all seem to indicate that it is nearly always the victim who is to blame. If only he had secured himself, if only he had left the safety devices in order et cetera. However, there may be probable reasons why workers do not work as safely as they should. Analysis of the reasons leading to accidents at work can almost always be traced back to secondary mechanisms or *root causes* – such as the (increasingly complex) organisation of the work process, unclear assignment of responsibilities, lack of training of and supervision over the workers, safety culture and so on (Groeneweg, 2002).

Until recently, there has been little data linking the secondary mechanisms directly to the occurrence of accidents at work. However, in 2003 TNO carried out a large survey among 10,000 Dutch employees, the Netherlands Survey Working Conditions (in Dutch: NEA). The NEA data has been analysed for three of the background mechanisms that may bear a relation to occupational accidents. These mechanisms were chosen as they are three distinguishing elements in Dutch labour relations and also probable causes of accidents: a rise in flexible work, a high level of work pressure and, closely connected to this, fatigue.

9.4.2 Flexible work

One of the characteristics of the Dutch labour force that appears to be related to occupational accidents, is the presence of flexible work. There are several indications that flexible workers are much more prone to accidents at work than 'core' employees

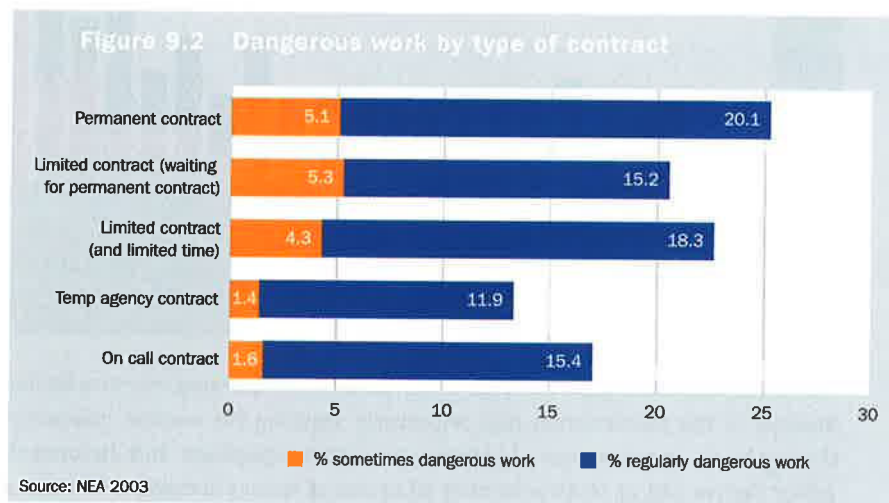
(Daubas-Letourneux 2003, Mangan 2000). This is also true for the Netherlands: analyses by the Labour Inspectorate indicate that 14.7% of all reported accidents were related to employees working through temping agencies, whereas this group constitutes only 4% of the labour force (Leertouwer 2002). The Netherlands Working Conditions Survey (in Dutch: NEA) corroborates these findings as well (see Figure 9.1). Workers on a limited contract (for limited time) show the highest accident rates, both for accidents with and without absence from work. Note in Figure 9.1 that workers from temping agencies and on-call workers hardly ever report lost time injuries. This is probably due to the fact that they get paid less sick pay or none at all, whereas the workers with a contract generally get paid 100% of their regular wages. Also, it may be that flex workers hesitate to report sick because of the vulnerable nature of their labour contract: if they report sick too frequently, they may not be hired in the future.²⁷ The fact that the *Monitor Arbeidsongevallen 2004* reports equal numbers of accidents resulting in absence from work for flexible and limited contract workers as for workers with a permanent contract, may be explained by the same reasons. Also, these outcomes may be obscured by the fact that flexible workers often work less hours a week than permanent contract workers, which lowers their risk.



One of the reasons for this higher incidence might be that risks are being transferred to the temporary workers. This is difficult to establish quantitatively (Goudzwaard, 2002). The findings of the NEA, at any rate, do not give an empirical basis to this explanation. Quite the contrary, it seems (see Figure 9.2). However, the NEA is a self report survey: the respondents were asked if they *thought* their work to be dange-

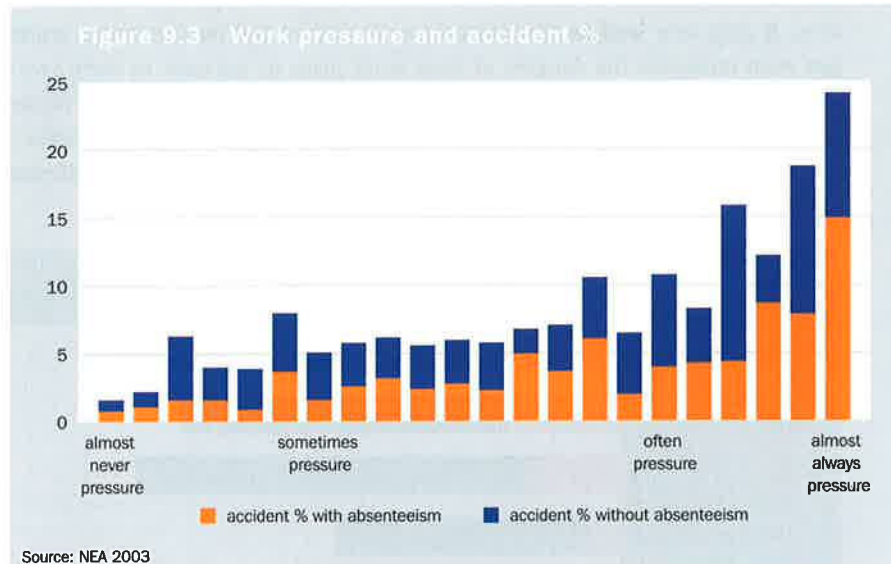
²⁷ Analyses by Boone and Van Ours (2002) make a reasonable case that the reporting rate of workplace accidents may also be influenced by the perceived likelihood of being dismissed, especially in an economic downturn.

rous. It may very well be that temporary, ill trained and inexperienced workers do not even recognise the dangers at their work place or inherent in their own tasks. Another explanation for the higher incidence might be that temporary workers are less trained and also less familiarised with the risks at the workplace (Tucker, 2002). Lack of experience is also frequently invoked to account for the higher incidence rates among younger workers.



9.4.3 Work pressure

Another explanation for high incidence rates may be increased work pressure – the theory being that if employees have to work harder and faster, they are bound to make more mistakes due to fatigue or inattention (Daubas-Letourneux, 2003). The third European Survey on Working Conditions is quite candid in this matter: “There is a very strong link between the degree of intensity on the one hand and [...] absence due to accidents on the other” (European Foundation for Living and Working Conditions 2003, p.13-15). This link is also revealed clearly in the NEA. Employees claiming to work under high time pressure have an incidence rate of 15%, whereas employees that hardly experience work pressure stay well below an incidence rate of 5% (see Figure 9.3).

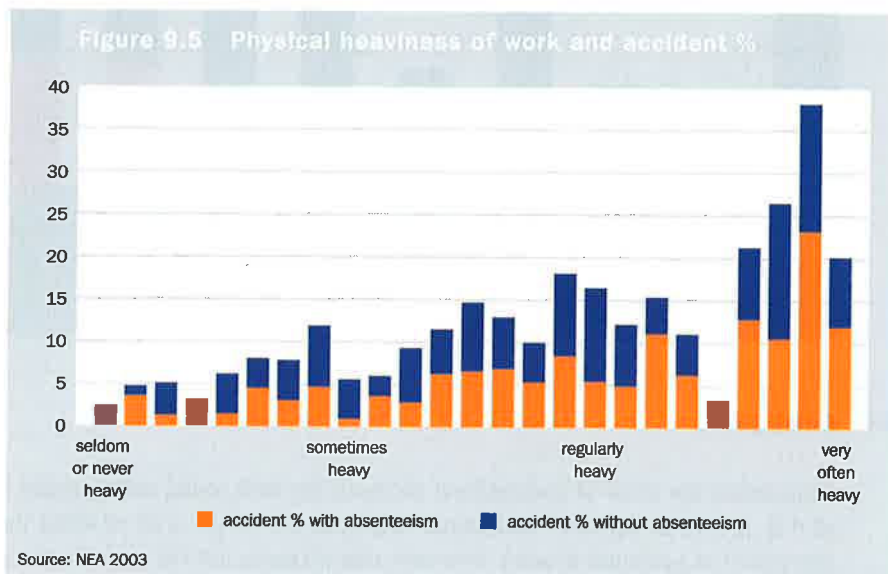
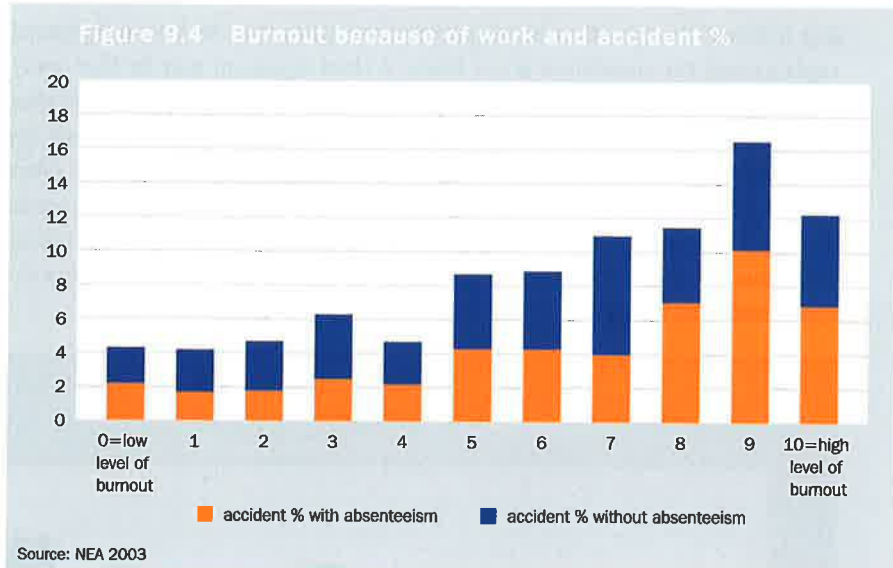


The theory that work pressure leads to inattention and hurrying may also be the intermediate to the phenomenon that improperly securing the worker, insecurely positioning loads, improper use of personal protective equipment and disconnection of safety devices add up to 44 percent of all causes of serious accidents. Workers simply do not have the time to live up to the demands of an ever-faster production.

9.4.4 Fatigue

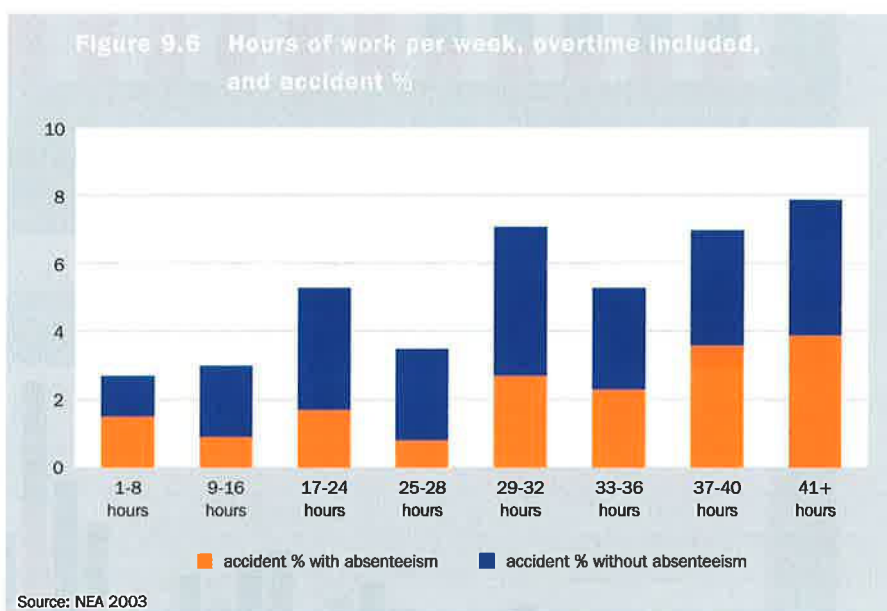
A third probable explanation for the incidence of workplace accidents may be fatigue or burnout. Tired employees are not only less coordinated in their physical movements, they may also be less attentive to risks. In the NEA we find a clear cut relation between the degree of burnout and the accident rate. Workers who report a high degree of burnout have a higher incidence rate (see Figure 9.4).

The NEA indicates two probable links between tiring work and workplace accidents. The first source of fatigue is physically demanding work (carrying, pulling or pushing heavy loads). This type of work clearly correlates with workplace accidents: the more demanding, the higher the incidence rate (see Figure 9.5). This relation is not too surprising, though. As getting trapped or squeezed by heavy loads was found to be the most prominent accident mechanisms (See Table 9.4), it is clear that employees performing heavy tasks are more prone to accidents. Getting squeezed between two sheets of paper will not entail hospitalisation of the office clerk.



A second source of fatigue being long working hours, the NEA seems to point to a relation between working hours and incidence rate. The relation is not very clear though (see Figure 9.6). There appears to be a correlation between the number of working hours and incidence rate. However, this correlation may be reasoned away by various explanations. One obvious explanation is that a worker employed for 40 hours works in dangerous surroundings five times longer than a part-time worker employed for

just 8 hours. On the other hand, part-time workers may be less experienced. This explains that the correlation is not linear. A third argument may be that many tasks requiring a higher level of education are seldom done in very small part-time jobs. Taking into consideration that employees with only primary education are involved in accidents seven times more than employees with an academic degree (Venema & Bloemhoff 2004, p. 17), this may also explain why working hours do not parallel the incidence rate more clearly. So, even if the 'fatigue-hypothesis' may be plausible at face value, much more research is needed to be done in this field before any clear-cut conclusions can be drawn.



9.5 Safety policy

Considering the costs of occupational accidents (in both social and financial terms, cf. 9.2), it is to be expected that Dutch employers would put a lot of effort into the prevention of accidents at work. However, this is clearly not the case. No more than 36% of all companies that have witnessed an occupational accident have indeed taken measures to prevent these accidents from recurring. Also, these kinds of measures can hardly be labelled prevention at source. The most common measure is 'training' (68%) and technical provisions (44%), whereas only 23% of the measures relate to process improvement (Erdem 2004, p.15). Also, various studies by TNO indicate that there are but few companies that fight the risk of occupational accidents at the source (Popma et al., 2004).

Among the probable reasons why companies are not very eager to improve safety,

are a general lack of risk awareness or safety culture (among both employers and employees) and economic drawbacks (short payback time, increased competition, lack of insight into the possible financial benefits). As a matter of cost-benefit analysis, employers are not inclined to invest ambitiously in reducing risks that are perceived or calculated to be statistically negligible (and indeed, the chance of a lost time incident is no more than about 1%).

For the Dutch Ministry of Social Affairs, this inert attitude by many employers has been an impetus for strengthening its policy on occupational safety. In 2003, the Ministry launched a programme called “Strengthening Occupational Safety”, aiming for a 15% decrease in the number of serious accidents. The programme runs until 2007, and focuses on three main themes: safety awareness and safety culture (Steijger et al., 2003), quantification of risks and specific safety improvement projects. Also, the Dutch government has introduced tax relief regulations for investments in safe machinery. In 2001 and 2002, some 9,000 companies deducted around some € 124 million of safety related investments from their corporate taxes.

The safety improvement projects are some 20 projects in selected companies or industries, that are aimed to develop ‘best practices’ in the field of occupational safety. These projects are subsidized by the Ministry, provided that the solutions they bring about lead to a lasting and substantial reduction in the number of occupational accidents. The companies themselves also invest in the project and share their incidence rates. Two of the projects are the development of various multi media forms of safety communication in the cardboard industry and peer observation and feedback in the chemical industry. The latter project aims for a 40% decrease in occupational accidents in three years’ time.

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This book deals with relevant aspects of Worklife in the Netherlands:

- Employment and productivity
- Work and social security legislation
- Trends and risk groups in working conditions
- Work in the Netherlands and the EU compared
- Gender and age and the quality of work
- Working hours and overtime
- VDU-work, homework and telework
- Health, chronic disease, absenteeism and work disability
- Work accidents

The book is strongly based on representative datasets to monitor work and health in the Netherlands since the year 2000.

TNO – with 4000 staff members – is the largest independent research organization in the Netherlands. The division Work & Employment – with 200 employees – is a national centre of knowledge on working life issues. It supports the Dutch government, public organizations and the business community. Its major fields of research are organization, work pressure and stress, physical strain and repetitive strain injuries, absenteeism, work disability and rehabilitation, labour market issues, and labour and health policies.

