European Foundation for the Improvement of Living and Working Conditions

Work environment statistics in Sweden

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Working environment surveys have been carried out in Sweden every two years since 1989. Since 1991, the surveys have included questions on work-related health problems. These surveys are designed to provide information against which reported occupational illnesses and injuries can be compared. This information also helps streamline reporting procedures. Findings reveal that work-related stress is on the increase, particularly in certain occupations.

Work environment statistics

The 'Work environment survey' (**Arbetsmiljöundesökningen** (AMU) in Swedish) has been conducted by the central statistics office, Statistics Sweden (SCB), on a two-yearly basis since 1989. To date, the results from seven surveys are available, each of which was carried out in a similar manner, focusing on the same issues. Similar material dating from 1984 exists for some issues. For each survey, almost 10,000 people were interviewed. Further details on the methodology of the survey may be found at the end of this report.

Another statistical source is the survey of 'Work-related problems' (**Arbetsorsakade besvär**), carried out annually by Statistics Sweden since 1991. The respondents are asked to state whether they have difficulties coping with normal housework or routine tasks at work. They are asked to describe the type of difficulties experienced and their causes. This survey does not aim for an exhaustive description of what illnesses are caused by work, but draws out certain basic information against which reported occupational diseases and accidents can be compared.

A further source of information is the 'Swedish information system for occupational accidents and work-related diseases' (**Informationssystemet för arbetsskador - ISA**). Reporting of accidents can be subject to the regulations and administrative procedures. However, data from surveys on work-related health problems help make reporting of industrial injuries more consistent.

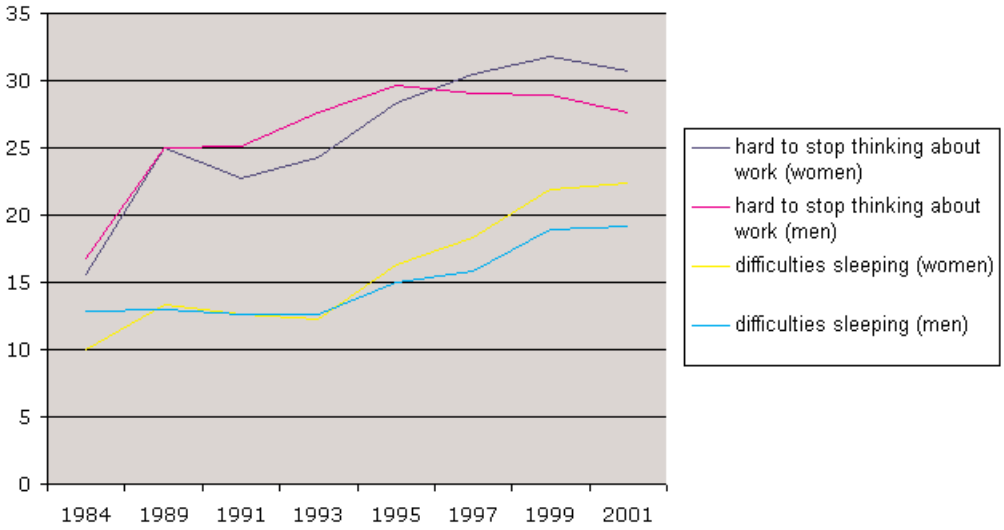
Together, these statistical resources cover many key aspects of working life and chart their evolution over the years.

Increasing stress levels

Many of the surveys' indicators point to a significant deterioration in the psychosocial work environment in recent decades.

Figure 1 illustrates two such trends. The first is based on a question which asks whether workers find it hard to stop thinking about work during their non-working time. It is designed to find out how preoccupying work is for people. In 2001, 31% of women and 28% of men replied that they found it hard to forget work in their off-work time.

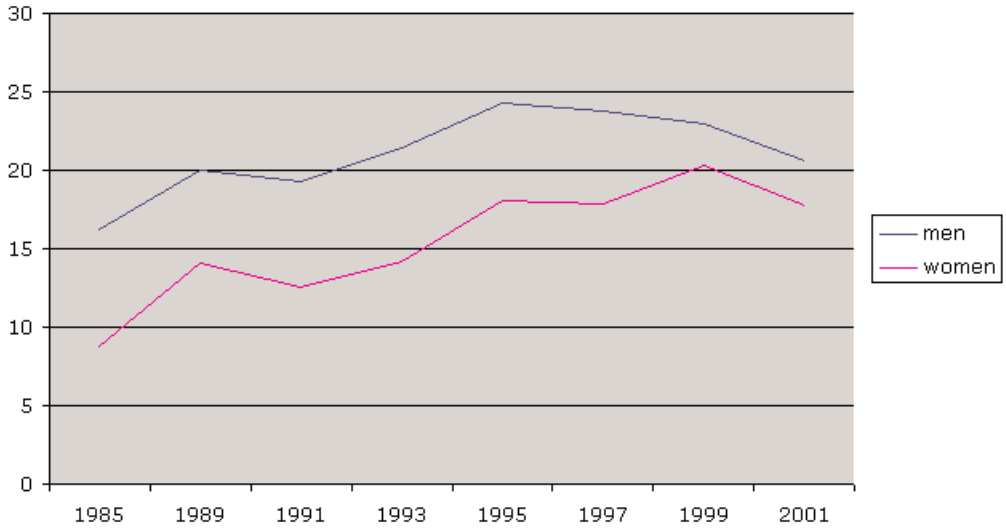
Figure 1: *Men and women constantly thinking about work and experiencing sleeping difficulties, 1984-2001*



% of women and men who find it hard to stop thinking about their work each or every second day. % who find it hard to sleep because of their work at least one day each week. Source: *AMU*

It seems that, over time, it becomes increasingly difficult to stop thinking about work. The second question reveals that there are negative associations for some workers. It asks whether workers find it difficult to sleep because thoughts about work are keeping them awake. In 2001, 22% of women and 10% of men answered that they find it hard to sleep because of their work (at least once a week). This problem has been on the increase since 1984. Obviously, the trends in Figure 1 indicate changes that have something to do with increasing stress.

Figure 2: *Men and women under pressure due to work overload, 1984-2001*



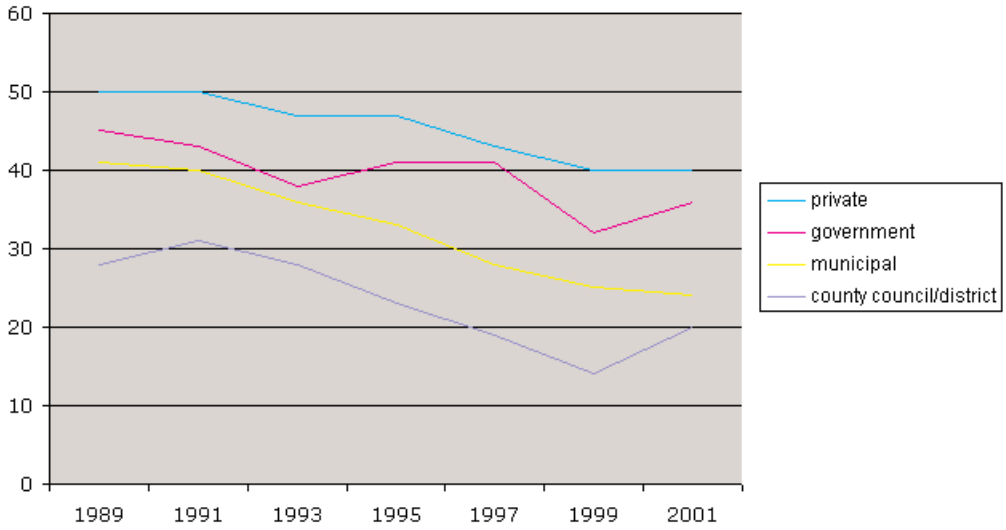
% of women and men who have so much to do (each or every second day) that they cannot take lunch, have to work overtime or take work home. 1984-2001. Source: AMU

Work seems to have increasingly become a mental preoccupation among workers in Sweden. A number of questions point in the same direction.

In 2001, 18% of women said that due to work pressures they had to skip lunch, work overtime or take work home each or every second day. Among men, the corresponding figure was 21%. Figure 2 shows the trend as it has been documented since 1984.

Similarly, as Figure 3 shows, control over pace of work has declined in recent years. In 2001, only 28% of women and 42% of men said that they always had control over their work pace. Figure 3 illustrates this aspect according to employment sector, where it is shown that there has been a decrease in all sectors over the time period, with the most marked drop occurring in the municipal sector.

Figure 3: *Control over pace of work, 1989-2001*



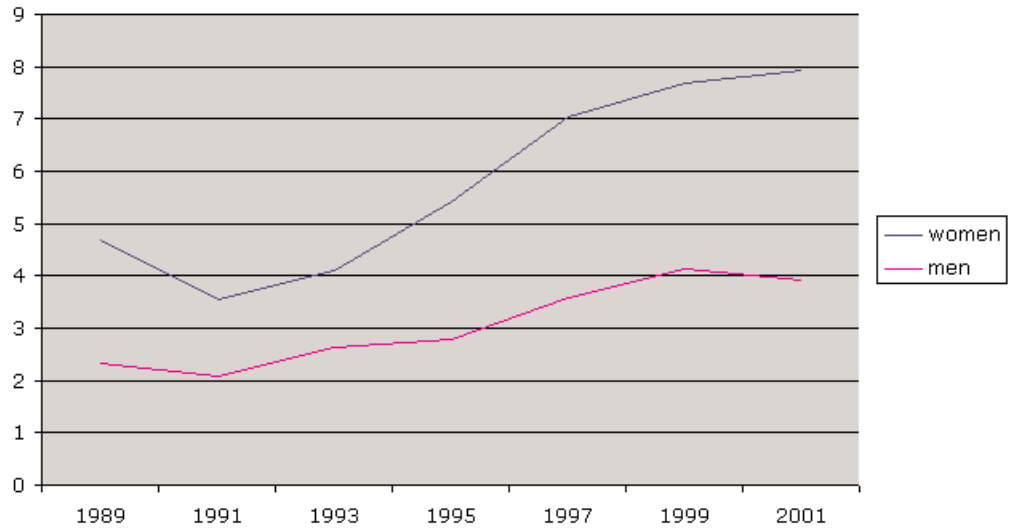
% responding that they can decide their work pace themselves all the time. 1989-2001. Source: *AMU*

In conventional research into work, the combination of high work pressure and low degree of control is linked to the risk of ill-health. Karasek, Theorell and others have focused on this connection when they studied the causes of heart disease. Figure 4 shows the results of combining rates of reported work pressure with data on levels of work autonomy. Work pressure is measured here as the inability to stop thinking about work during time off at least once a week. Lack of control over work is measured by an index, based on three questions:

- Can you decide your work pace yourself?
- Can you decide for yourself when different tasks should be done (for instance, by choosing to work harder some days and less hard other days)?
- Do you take part in decisions as to how your work should be carried out (for instance, what should be done, how it should be done or whom you should collaborate with)?

These questions provide the possibility of creating four distinct rates of control. The combination of high work pressure and low degree of control increases considerably over the time period, especially for women.

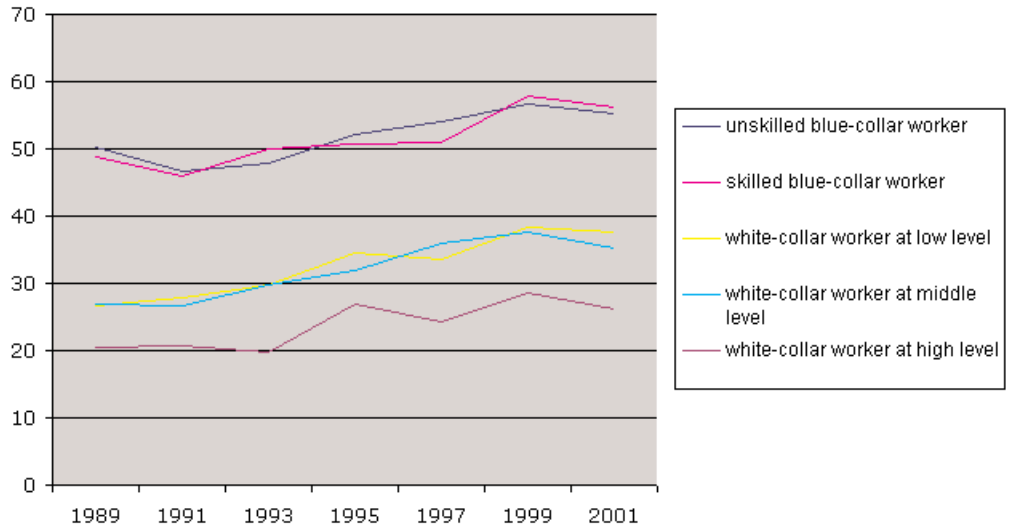
Figure 4: *Men and women constantly thinking about work and having limited control over their work, 1989-2001*



% of women and men who cannot stop thinking about work on their time off, combined with limited control over their work.

In parallel with these trends, an increasing number of people seem to be physically tired after work. In 2001, 44% of women and 41% of men reported being physically tired at least one day each week. Figure 5 shows how the sense of fatigue increases over time. The tendency is most striking when, as in this figure, a distribution is made according to the socioeconomic group, i.e. whether one is a skilled or unskilled blue-collar worker, or a white-collar worker at low, middle or high level. The proportion of those suffering from fatigue increases over time in each group.

Figure 5: *Work-related fatigue, 1989-2001*



% who are physically tired after work (at least once each week). Source: *AMU*

Differences among occupational groups

The large number of respondents in the AMU survey makes it possible to provide a detailed breakdown of the occupational groupings. Some examples will be described below; the occupations most affected will be singled out in each area.

The first detailed examination in this section (see Table 1) considers the responses to the question whether the respondent is obliged to skip lunch, work overtime or take work home each or every second day, due to work pressures. The data are based on total figures for the years 1997, 1999 and 2001 (in order to calculate on the basis of sufficiently large groups). For women, typical occupations where the work leads to a considerable amount of such extra work include female teachers, managers, and health and safety specialists. For men, a similar picture emerges, with doctors being the group most affected by work pressures.

Table 1: *High levels of work pressure, by occupational group*

Women	**%**	**Men**	**%**
Primary education teaching professionals	77.2	Medical doctors	83.2
Health professionals (except nursing)	71.4	Managers of small enterprises in wholesale and retail trade	70.7
Corporate managers	70.0	College, university and higher education teaching professionals	69.0
Secondary education teaching professionals	63.0	Other specialist managers	68.4
Managers of small enterprises	58.0	Production and operations managers	66.5
Medical care nurses	57.3	Primary education teaching professionals	65.1

Occupational groups experiencing high levels of work pressure in that they have so much to do that they cannot take lunch, have to work overtime or take work home (each or every second day). Data for 1997, 1999 and 2001. Source: *AMU*

Table 2 shows occupations where at least 50% of women and men report being physically tired after work at least one day each week.

Women in services and in care work report high rates of fatigue. These are occupations where a large part of the daily work consists of contacts with other people, and where the possibilities of influencing one's own work are limited. Among men, the picture is somewhat different. Here, physically demanding jobs cause the highest levels of fatigue. Drivers of different types of vehicles and managers in small companies also report high levels of fatigue.

Table 2: *High levels of after-work fatigue, by occupational group*

Women	**%**	**Men**	**%**
Mail workers, sorting clerks and others	75.5	Crop and animal producers	70.4
Housekeeping and restaurant services workers	64.3	Carpenters and joiners	64.3
Assistant nurses and hospital ward assistants	64.1	Painters and related workers	64.3
Helpers in restaurants	63.4	Rail and road construction workers	62.8
Shop salespersons, food store assistants	62.4	Metal moulders, welders, sheet-metal workers, structural-metal preparers and related trades workers	60.2
Helpers and cleaners in offices, hotels and other establishments	61.6	Plumbers	59.7
Home-based personal care and related workers	60.9	Market gardeners and crop growers	59.5
Machine and assembly operators	59.9	Mail carriers and sorting clerks	59.1
Hairdressers, barbers, beauticians and related workers	58.7	Heavy truck and lorry drivers	58.5
Stock clerks and storekeepers	57.6	Mechanical machinery assemblers	58.1
Teaching professionals, artistic and practical subjects	56.9	Car, taxi and van drivers	57.9
Craft and related trades workers	54.7	Other craft and related trades workers	56.7
Childcare workers	53.5	Managers of small enterprises in wholesale and retail trade, hotels and restaurants, transport and communications	56.2
Shop salespersons, non-food stores	52.9	Agricultural or industrial machinery mechanics and fitters	54.9
Stores and transport clerks	52.4	Welders and flame cutters	54.3
Nursing associate professionals	51.5	Elementary occupations	52.8
		Motor vehicle mechanics and fitters	52.5
		Shop salespersons, non-food store assistants	52.4
		Building caretakers	51.5

Occupational groups experiencing high levels of physical tiredness after work (at least one day) each week. Data for 1997, 1999 and 2001. Source: *AMU*

Table 3 illustrates the results of occupational groups reporting that they find it hard to stop thinking about work during their time off (each or every second day).

Teachers and managers often experience difficulties in relaxing after work. This problem is also common among entrepreneurs and in occupations which involve a large amount of contact with the public.

Age and gender are not significant factors in the results. The most significant differences are between the various occupations.

Table 3: *Constantly thinking about work, by occupational group*

Women	**%**	**Men**	**%**
Primary education teaching professionals	85.4	Primary education teaching professionals	78.8
Teaching professionals, academic subjects	83.6	College, university and higher education teaching professionals	75.0
Production and operations managers	80.7	Managers of small enterprises in wholesale and retail trade, hotels and restaurants, transport and communications	72.6
Managers of small enterprises	75.9	Other specialist managers	70.7
Teaching professionals, artistic and practical subjects	75.8	Writers and creative or performing artists	69.1
Other specialist managers	71.6	Production and operations managers	68.3
Authors, journalists and related professionals	68.6	Secondary education teaching professionals	67.6
Health professionals (except nursing)	67.3	Market research analysts and related professionals	65.9
Personnel and careers professionals	67.2	Technical and commercial sales representatives	62.8
Pre-primary education teaching associate professionals	62.9	Health professionals (except nursing)	60.0
Social work associate professionals	61.5		
Technical and commercial sales representatives	60.3		
Public service administrative professionals	60.1		

Occupational groups who find it difficult to stop thinking about their work (each or every second day). Data for 1997, 1999 and 2001. Source: *AMU*

Finally, Table 4 considers occupations reporting a large degree of repetitive work. In 2001, 44.9% of women and 36.5% of men said that their work involved repetitive movements for at least half of their working time. These percentages have slightly increased over the time period: in 1989, the corresponding figures were 42.3% for women and 33.6% for men. The table shows the occupational groups most affected.

Table 4: *Repetitive work, by occupational group*

Women	**%**	**Men**	**%**
Cashiers and ticket clerks	93.2	Mail workers and sorting clerks	79.2
Telephone switchboard operators	89.1	Agricultural and other mobile-plant operators	77.8
Hairdressers, barbers, beauticians and related workers	85.3	Painters and related workers	74.4
Mail workers and sorting clerks	83.6	Car, taxi and van drivers	73.7
Assemblers	82.7	Elementary occupations	66.4
Helpers and cleaners	76.9	Other craft and related trades workers	65.7

Occupational groups reporting that their work involved repetitive movements for at least half of their working time. Data for 1997, 1999 and 2001. Source: *AMU*

About the AMU survey

'The Work Environment survey' (**Arbetsmiljöundesökningen** (AMU) in Swedish) has been carried out by Statistics Sweden (SCB) on a two-yearly basis year since 1989. For each survey, almost 10,000 people were interviewed.

The AMU survey is presented as an appendix to the national **Labour Force Survey (AKU)**. This means that normal background variables, such as where and how one is employed, are already known.

SCB has considerable experience in measuring working conditions using interviews and questionnaires. The methodological work has included a number of validation studies, where answers to different kinds of questions have been compared with other information, for instance technical information. This work has shown when it is possible to expect meaningful answers to survey questions and has provided insights into how best to design questions and reply alternatives in order to obtain reliable answers.

The statistical information is based on the assumption that employees are able to describe their working conditions in some detail and that those who look at the results can easily interpret these descriptions. The formulations used avoid judgement and evaluation as far as possible. The methodological approach is set out in the SCB publication: 'Att utveckla sociala indikatorer - en surveyansats belyst med exemplet arbetsmiljö' ('Developing social indicators - a survey effort based on an example from the work environment'), *Urval* no 21, SCB, 1991.

In the AMU, the answers are linked to scales where the respondent can indicate how frequent or rare a phenomenon is. This makes it possible to both answer and interpret the answers quite precisely. An important aspect of the development work has been to develop scales to reduce the element of subjectivity as much as possible. The most common scales used in AMU are the following:

- A scale that indicates the incidence of something: 1) Each day, 2) A couple of days per week (one out of two days), 3) One day every week (one out of five days), 4) A couple of days per month (one out of 10 days), 5) Not at all/Rarely.
- A scale that indicates what proportion of the working time something occupies: 1) Almost always, 2) About 3/4 of the time, 3) Half the time, 4) About 1/4 of the time, 5) Sometimes (perhaps 1/10 of the time), 6) No, not at all.
- A scale that estimates whether something occurs or not: 1) Always, 2) Most of the time, 3) Almost never, 4) Never.

Because of the largely descriptive approach of the AMU, it is easier to interpret different relationships than is ordinarily the case: for instance, the relationship between work environment and ill-health. The work environment questions are mainly descriptive in content without subjective elements. This is useful, since relationships are often strong between the work environment and ill-health, which is a more subjective measure. It is important to be able to differentiate between alternative interpretations.

Commentary

Statistics on the working environment and occupational injuries in Sweden have been carried out over a considerable period. This makes it possible to point to important changes over time. The material is also extensive: by combining the results from several studies, it is possible to generate a large amount of statistical material. This, in turn, makes it possible to sub-divide and report on the labour market in many different categories.

Some of the most interesting results concern changes in the psychosocial environment. Very clear trends have been observed regarding increasing stress in the workplace. Measurement in this field is difficult, but, because the questions used by AMU are clearly formulated and descriptive, the results are considered reliable. The potential influence of changing trends in respondents' values is also kept to a minimum in this way.

Nonetheless, there will need to be some modifications in the development of the survey to reflect the ever-evolving work environment, most notably the organisational changes that have taken place in Swedish companies during recent years. Many enterprises have downsized, outsourced or changed their organisation according to principles such as lean production, time-based management and business process reengineering.

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References

Statistical publications

The two-yearly results from the AMU are presented in tables that specify the data according to gender, age, socio-economic grouping, occupation and sector. The most recent publication is **Arbetsmiljön 2001** (*Work environment 2001*).

Results from the annual investigation of work-related difficulties are presented in a similar manner. The most recent publication is **Arbetsorsakade besvär 2002** (*Work-related difficulties 2002*).

In Sweden, industrial injuries are reported annually in addition to preliminary figures and final figures. The latest publication is Arbetsskador 2002. **Preliminära uppgifter** (*Occupational injuries 2002: preliminary figures*) and **Arbetssjukdomar och arbetsolyckor 2001** (*Occupational diseases and occupational accidents 2001*).

All of these publications are available for downloading as PDF files from the Swedish Work Environment Authority at **http://www.av.se.**

Other reading

Arbetskraftsundersökningarna 2002 (*Labour Force Surveys*), Statistiska meddelanden AM 12 SM 0301.

Aronsson, G., Gustafsson, K. and Dallner, M., 'Sick but yet at work: An empirical study of sickness presenteeism', *Journal of Epidemiology and Community Health*, vol 54 No 7, July 2000.

Aronsson, G., Gustafsson, K. and Dallner, M., 'Work environment and health in different types of temporary jobs', *European Journal of Work and Organisational Psychology*, 11 (2), 2002.

Karasek, R. and Theorell, T., *Healthy work: stress, productivity and the reconstruction of working life*, Basic Books/Harper, New York, 1990.

Marklund, S. (ed.), *Worklife and Health in Sweden 2000*, National Institute for Working Life/Swedish Work Environment Authority, 2000.

Wikman, A., 'Att utveckla sociala indikatorer - en surveyansats belyst med exemplet arbetsmiljö' ('Developing social indicators - a survey effort based on an example from the work environment'), *Urval* no 21, SCB, 1991.

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