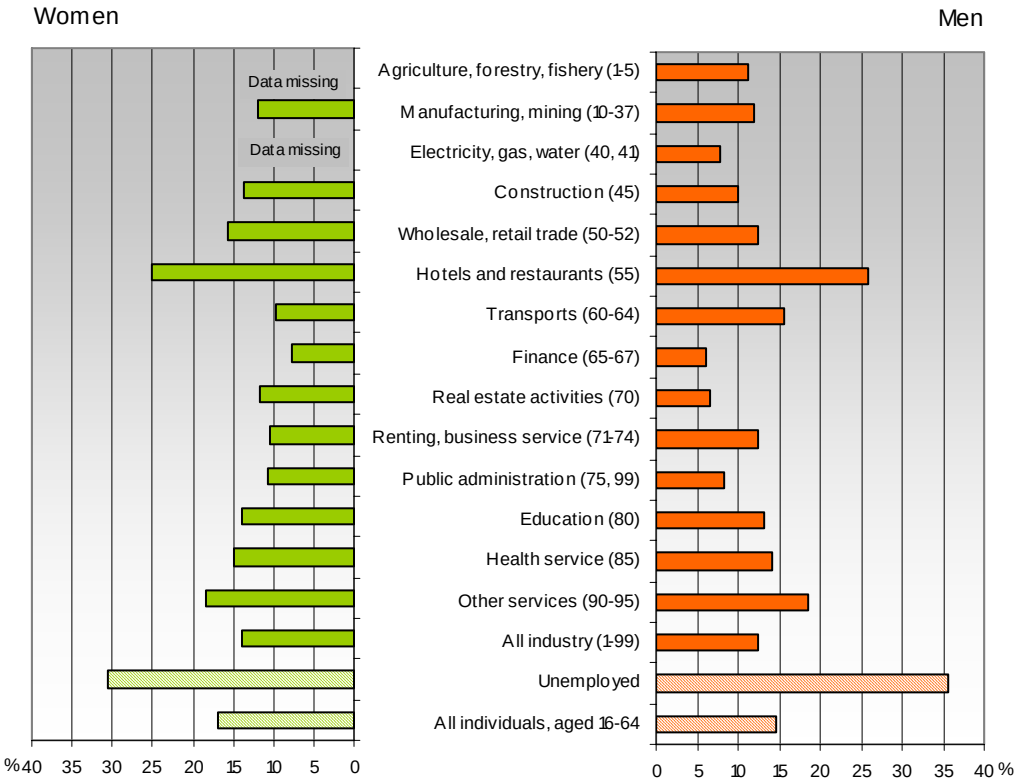
MILJÖRÄKENSKAPER

Rapport 2004:1

Social statistics by industry

- Introducing the social dimension into environmental accounts

Economic problems in 2000-2002. Per cent of employed persons.



Statistiska centralbyrån
Statistics Sweden

Rapport 2004:1

Social statistics by industry

- Introducing the social dimension into environmental accounts

Statistiska centralbyrån
2004

Environmental accounts

Social statistik per bransch

Hur den sociala dimensionen kan föras in i miljöräkenskaperna

Producent Producer	SCB, MR/REN Miljö- och regionalstatistik Box 24300 104 51 Stockholm
Förfrågningar Inquiries	Maja Larsson, miljöräkenskaper tfn +46 (0)8-506 947 12, maja.larsson@scb.se Martin Villner, miljöräkenskaper tfn +46 (0)8-506 945 61, martin.villner@scb.se

ISSN 1403-1337
ISBN 91-618-1256-0

Printed in Sweden
SCB-Tryck, Örebro 2004

Preface

In 1993, Statistics Sweden, the National Institute of Economic Research and the Swedish Environmental Protection Agency were instructed by the Swedish government to prepare a study analysing the physical links between the economy, the environment and natural resources, the monetary reflection of these relations and the state of the environment. The aim of work on environmental accounts at Statistics Sweden is to develop and maintain a system of physical accounts that is linked to the economic activities described in the national accounts. In practice, this means developing a system of environmental and natural resource statistics that can be linked to the industry, product and sector categories used in the national accounts, thus forming a satellite system of accounts around the national accounts.

Many of the policy interventions that aim to stimulate economic growth or protect the environment have social effects. Therefore, it is of interest to investigate ways to incorporate more social information into the environmental accounts. Social aspects have earlier been included in the Swedish environmental accounts, for example in the report "Sustainable Development Indicators - based on environmental economic and social statistics" (2003:3).

The aim of the present report is to expand the social field in the environmental accounts by including data by industry from the Living Conditions Survey (ULF) within four areas; working environment, health, financial problems/material assets and social networks/political resources. Also further analyses in the form of industry profiles and decoupling diagrams have been included.

The report has been prepared by Maja Larsson and Martin Villner, at Statistics Sweden, with contributions from Eva Lundin-Högstorp, Viveka Palm and Cecilia Skjöld.

Table of contents

Summary

The system of integrated environmental and economic accounts (SEEA) was created as a means of including environmental information in the dominating economic policy debate. By arranging data in a satellite system to the system of national accounts (SNA), it is possible to use the economic data together with the environmental data, thus enabling environmental economic analyses. The UN has recommended the development of the SEEA in order to make international comparisons and analyses possible. One of the intentions of the SEEA is to serve as an information system for the issue of sustainable development. Many of the policy interventions that aim to stimulate economic growth or protect the environment have social effects. Therefore, it is of interest to investigate ways to incorporate more social information into the SEEA.

Environmental accounts at Statistics Sweden have already included some social data in the environmental account framework, e.g. in the report "Sustainable Development Indicators - based on environmental economic and social statistics" from 2003. By including data by industry from the Living Conditions Survey (ULF), it is possible to include more social aspects in the environmental accounts. Data in different social areas from ULF have been chosen and are presented by industry, sex and socioeconomic group for a number of indicators in this report (see the table below). The indicators are divided into four areas; working environment, health, financial problems/material assets and social networks/political resources. Each area is discussed in a separate chapter. There is also a chapter discussing other possible analyses and uses of these new social data in the environmental accounts, e.g. industry profiles and decoupling diagrams.

Indicators in the report

Working environment
- Accidents during the last 12 month
- Heavy lifting
- Unsuitable working position
- Constant deafening noise
- Mentally strenuous work
- Hectic/monotonous work
- Casual work among all employees

Health
- Bad state of health
- Severe problems due to long illness
- Reduced working capacity due to long illness
- Impaired hearing
- Visit to the dentist during the last year
- Everyday smoker
- Obesity

Financial problems and material assets
- Economic problems
- No cash reserve of SEK 13 000 per week
- Access to weekend/second home
- Holiday trip during the last year
- Access to car in the household
- Overcrowded living conditions

Social networks and political resources
- No close friends
- Incidents with violence or physical threats
- Voter turnout in national parliamentary elections
- No participation in discussions on politics
- Lack the ability to appeal against a public authority
- Member of a trade union
- Member of a political party

Each indicator is presented by sex and by socioeconomic group for the period 2000-2002 and in time series for the period 1988-2002. The results showed large differences between the industries, e.g. that the physical working environment was worse among employed persons in goods producing industries (e.g. the manufacturing and mining industry) than among employed in

service industries (e.g. the finance industry). Some of the results are more unreliable than others. To enhance the data quality, three years have been added together.

Conclusions

The report shows that it is possible to include many different aspects of the social field in the environmental accounts. A social dimension included in the environmental accounts would make it possible to analyse social data together with the system's economic and environmental data. Adding social data on industry level to the environmental accounts also complements the environmental accounts with the social dimension of sustainable development, which makes it possible to analyse the area further on an industry level. The indicators in this report could also be used to follow up aspects of the Swedish strategy for sustainable development.

The report also shows that presenting data on working environment, health, financial problems and social networks in an accounting framework, such as by industry, works well and presents new angles of ULF data, since these are not normally presented by industry. Also presenting ULF data together with other economic and environmental data gives the information new dimensions and uses.

Future work

Future work on the environmental accounts will focus more on social data and its connections and relations to other data in the Swedish environmental accounts, i.e. economic activity and environmental impact data. Future analyses in the area of sustainable development can also now include all three dimensions. The industry profiles will, from now on, also include social information.

Some of the data, such as data on the working environment, are suitable to use as benchmark information in triple-bottom-line reporting. The other areas do not have the same immediate cause-effect relationship to environmental issues. In these cases the uses of the data are probably dependent on research questions formulated from a social perspective and the environmental component is largely missing. Instead, the variations that can be seen by dividing the data by industry can provide new policy sources.

Sammanfattning

Miljöräkenskaper kom till som ett sätt att bryta den dominans av ekonomisk information som existerar på policynivå. Genom att skapa ett satellitsystem med miljörelevant information som var indelad på samma sätt som nationalräkenskaperna så öppnas möjligheter att göra miljöekonomiska analyser. FN föreslog och understödjer denna utveckling för att internationella jämförelser och analyser ska vara möjliga att göra. Miljöräkenskaperna ses också som ett informationssystem som kan leverera analyser för att främja en hållbar utveckling. Många av de åtgärder som görs för att öka den ekonomiska tillväxten eller skydda miljön har sociala effekter, vilket gör att det är intressant att inkludera social information i SEEA (System of integrated environmental and economic accounts).

Miljöräkenskaperna vid Statistiska centralbyrån har tidigare inkluderat social statistik i miljöräkenskapssystemet, t.ex. i rapporten ”Indikatorer för hållbar utveckling - baserade på miljöekonomisk och social statistik” från 2003. Genom att inkludera statistik på branschnivå från ”Undersökningar om Levnadsförhållanden” (ULF) kan flera sociala aspekter tas med i miljöräkenskaperna. Data inom olika sociala områden i ULF-undersökningarna har valts ut och redovisats på bransch, kön och socioekonomisk grupp för ett antal indikatorer (se tabellen nedan) inom fyra områden; arbetsmiljö, hälsa, ekonomiska problem/materiella tillgångar samt sociala nätverk/politiska resurser. Varje område behandlas i separata kapitel. Det finns också ett kapitel som behandlar andra möjliga analyser och användningsområden för dessa nya sociala data i miljöräkenskaperna, t.ex. branschprofiler och frikopplingsdiagram.

Indikatorer i rapporten

Arbetsmiljö
- Olycka under de senaste 12 månaderna
- Tunga lyft
- Olämpliga arbetsställningar
- Öronbedövande buller hela tiden
- Psykiskt ansträngande arbete
- Jäktigt/enformigt arbete
- Tillfälliga anställningar

Hälsa
- Upplevt hälsotillstånd
- Svåra problem pga långvarig sjukdom
- Minskad arbetskapacitet pga långvarig sjukdom
- Nedsatt hörsel
- Tandläkarbesök
- Röker varje dag
- Fetma

Ekonomiska problem och materiella tillgångar
- Ekonomiska problem
- Ingen kontantmarginal på 13 000 kr
- Tillgång till fritidshus
- Semesterresa
- Tillgång till bil
- Trångbodd

Sociala nätverk och politiska resurser
- Ingen nära vän
- Utsatt för våld eller hot
- Valdeltagande
- Deltar inte i politiska diskussioner
- Saknar möjlighet att överklaga myndighetsbeslut
- Medlem i fackförening
- Medlem i politiskt parti

Varje indikator har redovisats på kön och socioekonomisk grupp för året 2000/02 och i tidsserier för åren 1988-2002. Resultaten visar stora skillnader mellan branscherna, t.ex. att den fysiska arbetsmiljön var sämre för sysselsatta i varuproducerande branscher (t.ex. tillverknings- och utvinningsindustrin) än för sysselsatta i servicesektorer (t.ex. finans). En del av resultaten är mer osäkra än andra. För att höja kvaliteten på datan har tre år adderats ihop.

Slutsatser

Rapporten visar att det är möjligt att inkludera många olika sociala aspekter i miljöräkenskaperna. Att inkludera den sociala dimensionen i miljöräkenskaperna gör det möjligt att analysera social data tillsammans med systemets ekonomi- och miljödata. Social data på branschnivå kompletterar även miljöräkenskapssystemet med den sociala dimensionen av hållbar utveckling, vilket gör det möjligt att analysera området ytterligare, på branschnivå. Indikatorerna i denna rapport kan också användas för att följa upp den svenska strategin för hållbar utveckling.

Rapporten visar också att presentation av data för t.ex. arbetsmiljö, hälsa, ekonomiska problem och sociala nätverk inom miljöräkenskaperna, d.v.s. per bransch, fungerar bra och ger nya infallsvinklar av resultaten i ULF-undersökningarna, eftersom dessa i normala fall inte redovisas på bransch. Att presentera ULF-data tillsammans med annan ekonomi- och miljöstatistik ger också nya dimensioner och användningsområden.

Fortsatt utveckling

Det fortsatta arbetet vid miljöräkenskaperna kommer att fokusera ytterligare på social data och dess samband och relation till annan data i de svenska miljöräkenskaperna, t.ex. data för ekonomisk aktivitet och miljöpåverkan. Framtida analyser av hållbar utveckling kan också nu inkludera alla tre dimensioner. Branschprofilerna kommer från och med nu att ha även social information.

En del av datan, tex arbetsmiljödata, är användbar för "benchmarking" inom "triple-bottom-line" rapportering. De andra områdena har inte samma direkta orsak-verkan samband till miljöfrågorna. I dessa fall är användningen av data troligtvis beroende av forskningsfrågor formulerade utifrån ett socialt perspektiv och miljökomponenten saknas till stor del. Istället kan variationerna som fås genom att redovisa datamaterialet per bransch ge information till nya policyområden.

1 Introduction

1.1 Background

The system of integrated environmental and economic accounts (SEEA) was created as a means of including environmental information in the dominating economic policy debate. By arranging data in a satellite system to the system of national accounts (SNA), it is possible to use the economic data together with the environmental data, thus enabling environmental economic analyses. The UN has recommended the development of the SEEA in order to make international comparisons and analyses possible. The development is encouraged by means of one of the UN city groups, called the London group.

One of the intentions of the SEEA is to serve as an information system on the issue of sustainable development. It is designed to integrate the issue of economic growth with the environmental pressures and resource depletion that are side-effects of the production and consumption patterns. The SNA provides the most widely used indicators of economic performance, growth, and the economic counterpart of social welfare. The SEEA provides information on the environmental impact of the different actors that produce and consume goods and services and also information on natural resources. These actors are the different industries, the public sector and households. However, in the various definitions or conceptualisations of sustainable development, social issues also play an important role.

Many of the policy interventions that aim to stimulate economic growth or protect the environment have social effects. Therefore, it is of interest to investigate ways to incorporate more social information into the SEEA, to provide better information for policy-making. Some of the environmental concerns are also social, as the health aspects of chemical usage and air pollution, as well as water quality or food quality. The working environment can be regarded as included in environmental issues but is often neglected because of lack of data. These areas are of importance in the different strategies for sustainable development that are being made. Hence, if it is possible to link such information to the SEEA, this could be of interest for the users.

Social statistics have a long history and are in many ways more elaborated and established than environmental statistics. It is therefore appropriate to include certain important aspects but necessary to set up some limits as to what can be regarded as a part of an accounting system. In a similar way, it can be said that there is much environmental and economic data that will never be a part of the SEEA, as the system mainly attempts to shed light on certain aspects of policy closely linked to production and consumption by economic agents. It can be said that some social variables are already included in the environmental accounts, as employment is a vital part of the national accounting structure. This makes it possible to analyse, for example, how many people may be affected by a particular policy that addresses some specific industries. In some countries, such as Holland, social accounting matrices (SAM) have been created and linked with the environmental accounts, analysing gender issues coupled to environmental policy and looking deeper into the environmental performance of households[1]. In some of the analyses related to the environmental industry, social aspects such as education, gender and regional issues on employment have also been addressed. Households are also treated as a sector of their own[2].

[1] Accounting for goods and for bads, de Haan, [2004], Statistics Netherlands.

[2] See for example: Households in the environmental accounts, [2003], Eurostat report *(download at www.scb.se/mi1202)*

Still, there are many aspects of the sustainability strategy in Sweden that are not covered by the existing system. All of them are not likely to fit into the SEEA, but some may benefit from a closer connection to environmental or economic information.

Environmental accounts at Statistics Sweden have already included social data in the environmental account framework. In 2003, a report[3] on sustainable development indicators was published, which included indicators on the working environment, e.g. sick leave, work-related injuries and jobs with a high level of stress. By including data by industry from the Living Conditions Survey (ULF), the social field in environmental accounts is expanded because the survey covers a broad spectrum of issues: working environment, health and political resources, etc.

1.2 Purpose

This project has 3 main purposes:

- To choose suitable social data and present it in a form that is comparable to the environmental and economic data. The possibilities for adding social data to the SEEA should also be investigated.
- To discuss with the data providers what aggregation level and data quality is possible.
- To complement the environmental accounts with the social dimension of sustainable development.

1.3 Limitations

The data in this report have been taken from the annual Living Conditions Survey (ULF) in Sweden. Other surveys in the social field at Statistics Sweden by industry have not been included but could possibly be used in the future (also see *section 2.2*).

1.4 Structure in the report

Chapter two describes the sources as well as the methods used.

Chapters three to six present social statistics by industry in four different areas. Chapter three begins with the working environment, followed by health in chapter four, financial problems and material assets in chapter five and finally, in chapter six, social networks and political resources. The indicators in each chapter are presented at the beginning of the chapter and every chapter follows the same structure.

Chapter seven presents examples of additional ways of presenting social data within environmental accounts, so-called decoupling diagrams, as well as other analyses, e.g. by educational level and region.

Chapter eight concludes the report and discusses the future use of social statistics in the environmental accounts.

[3] Sustainable Development Indicators - based on environmental economic and social statistics, 2003:3 [2003], Statistics Sweden.

2 Method and sources

The source for this report is the annual Living Conditions Survey (ULF). This chapter gives a description of the survey, its methods as well as the selection of indicators in this current project. A more detailed description of the methods used by ULF can be found in *Appendix 1.*

2.1 Background to the measurement of living conditions

Social reporting based on social indicators is a growing area of research that has been under development for the past 30 years at national statistical institutes, interest groups and individual researchers[4]. Social reporting has become a useful tool for providing a description of a given population's living conditions.

Much of the early thinking in the social indicator movement was influenced by the unity of economic statistics, but neither a unifying general social theory nor a corresponding linkage (such as comparing to money in economic statistics) is currently available[5]. Nowadays, most national statistical offices and several international agencies produce social reports.

In 1994, the statistical office of European Union, Eurostat, conducted the first comparative survey in the (then) twelve member states[5]. They collected information on income, employment, education, housing, material assets and selected indicators in several other social themes. In addition, three social surveys in the Nordic countries (Sweden, Finland and Norway) were conducted. These 15 surveys have been harmonised to build a social indicator database for 15 countries (the 15 old EU member states excluding Austria and including Norway).

2.1.1 Statistics Sweden's annual Living Conditions Survey (ULF)

Statistics Sweden has conducted annual interview surveys among large samples of the population since 1974 (approximately 8 000 persons annually). These surveys of individual and household living conditions (ULF) include indicators in ten "social domains":

- Education
- Employment
- Working environment
- Finances
- Housing conditions
- Transportation and communication
- Recreation
- Social participation
- Health
- Social mobility

The survey results are published in social reports. In addition to the annual survey, there are four in-depth modules with more detailed questioning which are included in the main survey for two consecutive years. They are then repeated after an interval of eight years. Certain fundamental considerations[4] common to all social reports and the selection of social indicators are:

- The measurement of living conditions takes place on individual or household level.
- Objective measures of actual living conditions are given higher priority than questions relating to values and demands for better living conditions.

---

[4] Välfärd och ofärd i 20-årsperspektiv 1975-1995. [1997] Statistics Sweden, *(Living conditions and inequality in Sweden – a 20-year perspective 1975-1995).*

[5] Social indicators research, European welfare production: institutional configuration and distributional outcome, Volume 64, J. Vogel, [2003].

- Measurement is not limited to purely economic factors. Examples of non-monetary aspects are social contacts, political participation and health.
- The statistics generated must have relevance for planning.
- The statistics should be able to function as "warning signals".
- Relationships between various problems should be measurable.
- Simultaneous measurement is a key objective, which is achieved by collecting data on many indicators through interviews with the same individuals at the same time.
- Reports should reflect a total perspective and provide facts on both changes and present conditions.
- The data should yield systematic statistics that provide a basis for the planning of the redistribution policy.

2.2 Other social data by economic activity

Statistics Sweden also conducts other surveys that are related to the social field, are possible to break down by economic activity (NACE) and are consequently of interest for environmental accounts:

- *The Work Environment Survey* has been conducted since 1989 and contains variables such as working hours, physical and psychosocial pain, exposure to chemicals and influence at the place of work.
- *The Work Related Health Problems Survey* describes health problems people relate to their work and has been conducted since 1991. The survey contains variables similar to the Work Environment Survey.
- Statistics on occupational diseases and accidents have been produced since 1978.
- *The Labour Force Survey* has been conducted since 1961 and includes variables such as working hours and employment.
- Wages and salaries for the private and public sector have been compiled since the 1970s.
- Statistics on road traffic accidents by industry have been produced for 1993-2001.
- Statistics on women and men in leading positions.

2.3 Data, indicators and industry grouping in the report

The environmental accounts provide information on, for example, environmental pressures and economic performance. This information is presented by industry. The social data in this present report show the percentage of employed men and women within each industry for each indicator, for example the percentage of employed women exposed to heavy lifting work in the manufacturing industry. The diagrams in *chapter 7.1.1* are an exception, showing how much, in per cent, each industry contributes to the total of all industries, for example employed women exposed to heavy lifting in the manufacturing industry account for X per cent of all the employed women that are exposed to heavy lifting. The estimated number of employed persons in each industry is included in *Appendix 3*.

Gaps in the diagrams mean that data are missing. If an indicator has value "0", it is written as such in the diagram.

2.3.1 Quality of data

Industry is a background variable in ULF. When the ULF data are broken down into industries, sex, socioeconomic group etc., the number of observations is reduced. If the number of observations is too low, this can result in unreliable data. In order to produce more observations, three years have been aggregated and a mean value is calculated for these three years. The number of observations (respondents) by industry is shown in *Appendix 3*.

The diagrams generally show estimates based on at least 50 observations. There are a few exceptions, such as for women in some industries, which have around 40 observations. 50 observations are considered to give sufficiently reliable data while 40 observations give unreliable data. However, without these estimates based on 40 observations, there would be too many gaps in the diagrams. This is why there are gaps in some diagrams, such as for the agricultural, forestry and fishery industry. As a result of too few observations for the agricultural, forestry and fishery industry in general, it has been difficult to draw conclusions about this industry. Therefore, there are few comments on this industry in the report.

2.3.2 Selection of indicators

The selection of indicators in the present report has been limited by the number of observations for each indicator. Some indicators also only have values for one or two years, which results in too few observations and, therefore, these indicators have not been included in the report.

Indicators have also been excluded because it has not been possible to present them by industry, such as the indicator unemployment, or because some indicators are very similar to each other. Socioeconomic group is not accounted for by sex in this report because of too few observations.

2.3.3 Industry grouping

The industry in which the respondent works is coded using the same set of two-digit codes that is used in the Statistics Sweden's Labour Force Surveys (AKU). This set of codes is compatible with Sweden's Standard for the Classification of Industrial Activity (SNI), which is, in turn, compatible with the international standard, NACE.

The number of observations limit the degree to which the industries can be broken down. The industries which are included in this report have at least 40-50 observations and industries with less observations have been excluded.

Two different groupings of industries are used in the report. The industry grouping is different in diagrams that show time series (1988-2002) compared to diagrams showing a three year average (2000-2002). The reason is that the classification system for industries (NACE) was changed from 1996, which means that many classifications do not correspond before and after 1996. In the diagrams with time series, only industries whose classification was not significantly changed have been included.

2.3.4 Age

For many of the indicators, age is an important factor, such as for impaired hearing. It is therefore important to consider the average age in an industry when conclusions are drawn about an indicator. For example, the average age in the agricultural, forestry and fishing industry is 45.5 years compared to 31.4 years in the hotel and restaurant industry.

3 Working environment

3.1 Introduction

The working environment is important from a welfare perspective because of its connection to health. The working environment can be harmful to health in the form of, for example, accidents and explosions. It can also be damaging in the form of allergies and stress-related health problems in the long-term. A harmful working environment can also cause absence from work and a high staff turnover, which can have an impact on the national economy.

The concept working environment contains both physical and psychosocial aspects. Physical aspects include strenuous work, heavy lifting, unsuitable working positions and noise. Psychosocial aspects include mentally strenuous work and hectic/monotonous work.

Indicators in chapter 3

In addition to the diagrams on working environment in this chapter, see also industry profiles and decoupling diagrams for indicators on working environment in *chapter 7.1*.

- **Accident during the last 12 months**

Answered "*yes*" to the question: Have you been exposed to an accident at work at some time during the last 12 months? No distinction is made for big or small accidents, and it is not necessary for the person to have been harmed.

- **Heavy lifting**

Answered "*yes*" to the question: Does your work requires heavy lifting on a daily basis?

- **Unsuitable working position**

Answered "*yes*" to the question: Does your work require you to stand or sit in crooked, twisted or other unsuitable working positions?

- **Constant deafening noise**

Answered "*all the time*" to the question: Is it noisy all the time or only occasionally? and also answered "*yes*" to the question: Is the noise deafening?

- **Mentally strenuous work**

Answered "*yes*" to the question: Is your work mentally strenuous?

- **Hectic/monotonous work**

Answered "*yes*" to the question: Is your work hectic and monotonous?

- **Casual work among all employees**

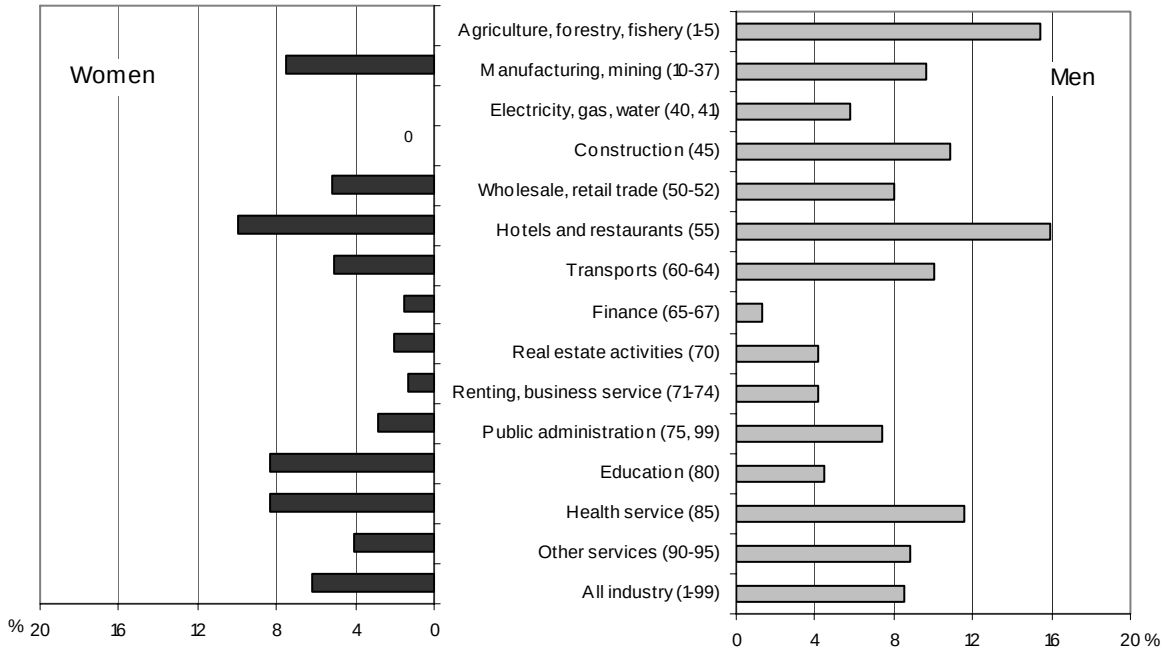
Answered "*yes*" to the question: Is your employment position casual? The person works full- or part-time. Casual work can include, for example, a temporary position, an internship or employed by the hour.

3.2 Physical working environment

3.2.1 Accidents at work

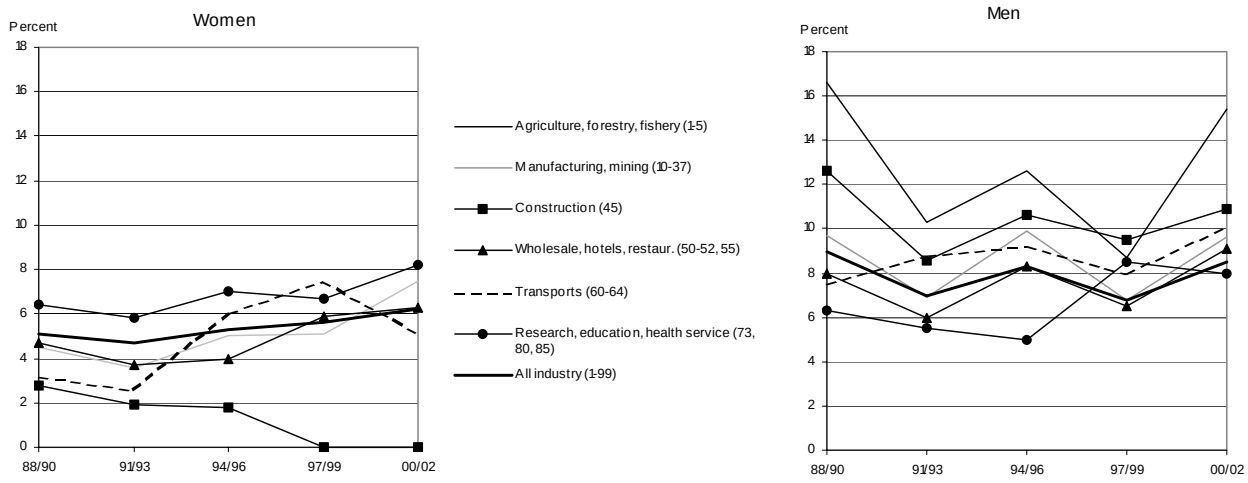
Diagram 1 illustrates accidents at work reported by employed men and women during 2000-2002. Employed men reported more accidents at work than employed women and there were considerable differences between industries. Employed men in the hotel and restaurant industry reported the most accidents at work, while those employed in the finance industry had the lowest accident rate.

Diagram 1. Accidents at work by sex in 2000-2002. Per cent of employed persons.



As shown in *diagram 2*, the share of employed men reporting accidents at work has generally fluctuated at around 7 per cent between 1988 and 2002, although increases in the number of accidents at work have occurred in the research, education and health service industry as well as in the transport industry. At the same time, there has been a small increase for employed women.

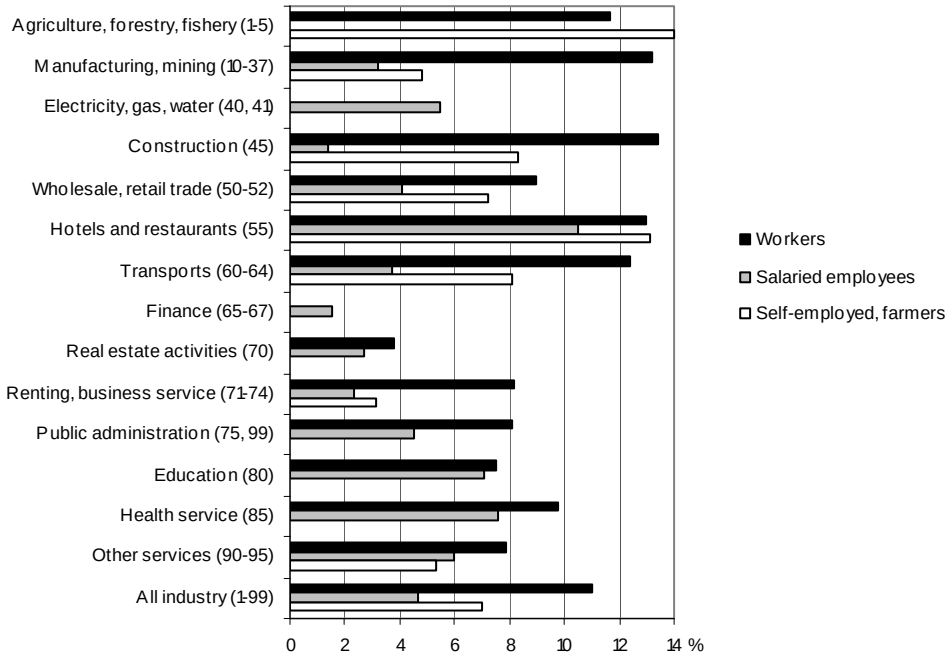
Diagram 2. Accidents at work between 1988-2002. Per cent of employed persons.



Note: Employed women in the agricultural industry have been removed from the diagram because of unreliable data.

As could be expected, workers did, in general, report accidents at work to a larger extent than salaried employees and self-employed persons/farmers (*diagram 3*). The largest difference between workers and salaried employees was in the construction industry, with 13 and 1 per cent respectively reporting accidents.

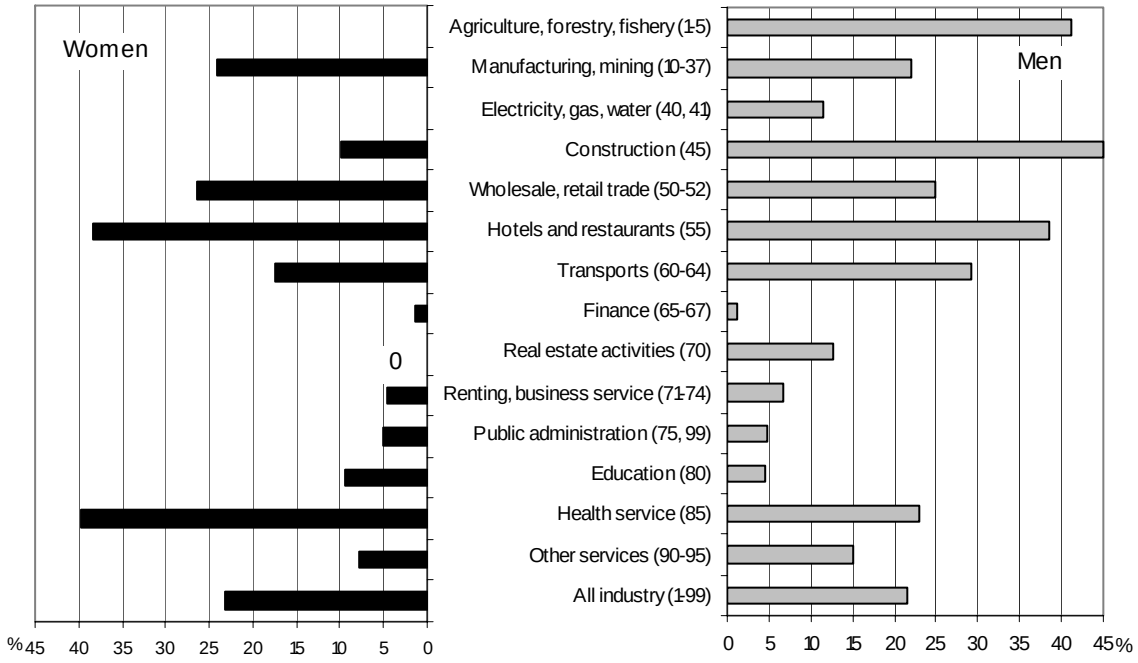
Diagram 3. Accidents at work by socioeconomic group in 2000-2002. Per cent of employed persons.



3.2.2 Heavy lifting

Almost a quarter of employed men and women were daily performing heavy lifting in 2000-02 (*diagram 4)*. The industry with the most heavy lifting was, for men, the construction industry. For women, the hotel and restaurant industry and the health service industry had the largest amount of heavy lifting. About 40 per cent in these industries performed heavy lifting on a daily basis in 2000-02.

Diagram 4. Heavy lifting by sex in 2000-2002. Per cent of employed persons.



There was a slight decrease in the number of employed men and women that performed heavy lifting on a daily basis between 1988 and 2002 (*diagram 5*). The differences between the industries were generally small, except in two cases. Employed women showed an increase in the manufacturing and mining industry and a decrease in the transport industry.

Diagram 5. Heavy lifting between 1988-2002. Per cent of employed persons.

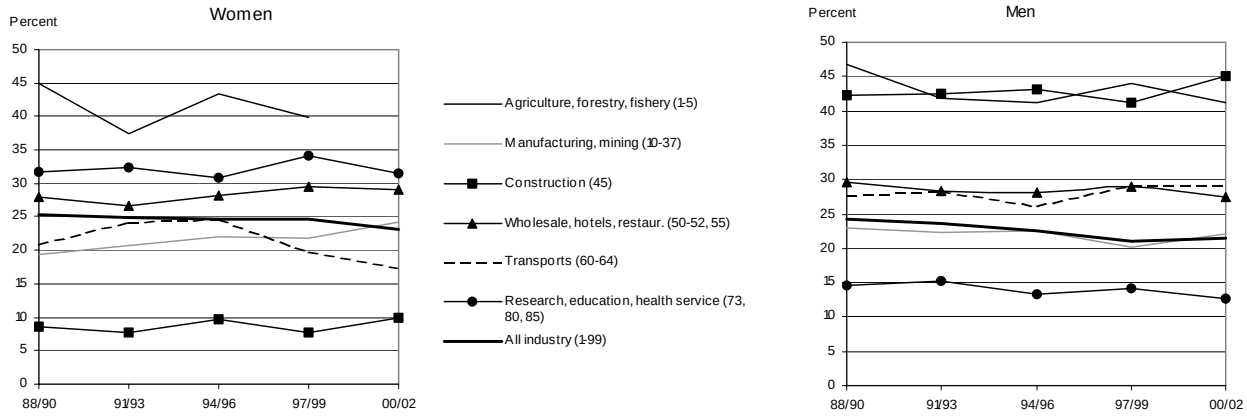
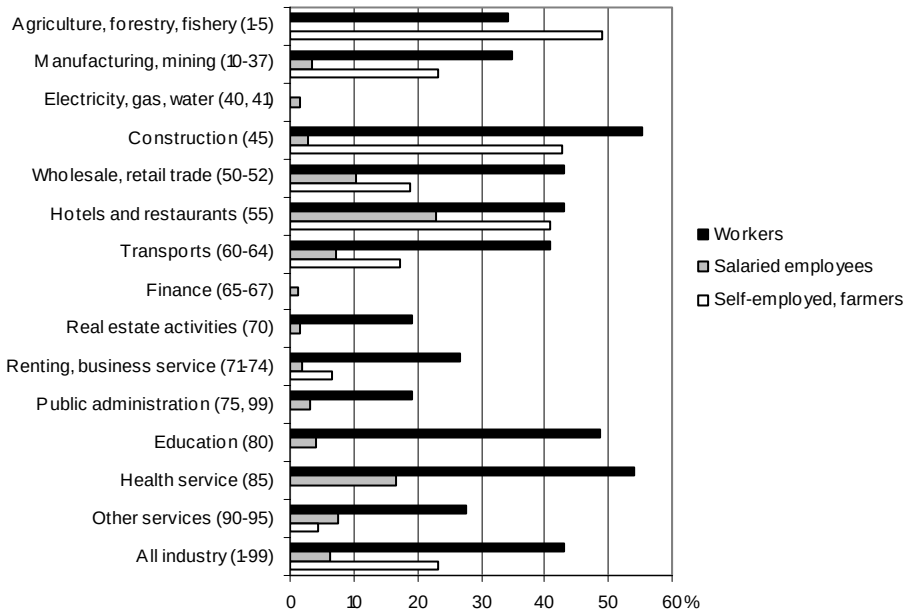


Diagram 6 shows a similar result for the indicator "heavy lifting" as for the previous indicator, i.e. that workers were exposed to heavy lifting to a much larger extent than salaried employees in 2000-02. Self-employed persons/farmers were in between the two.

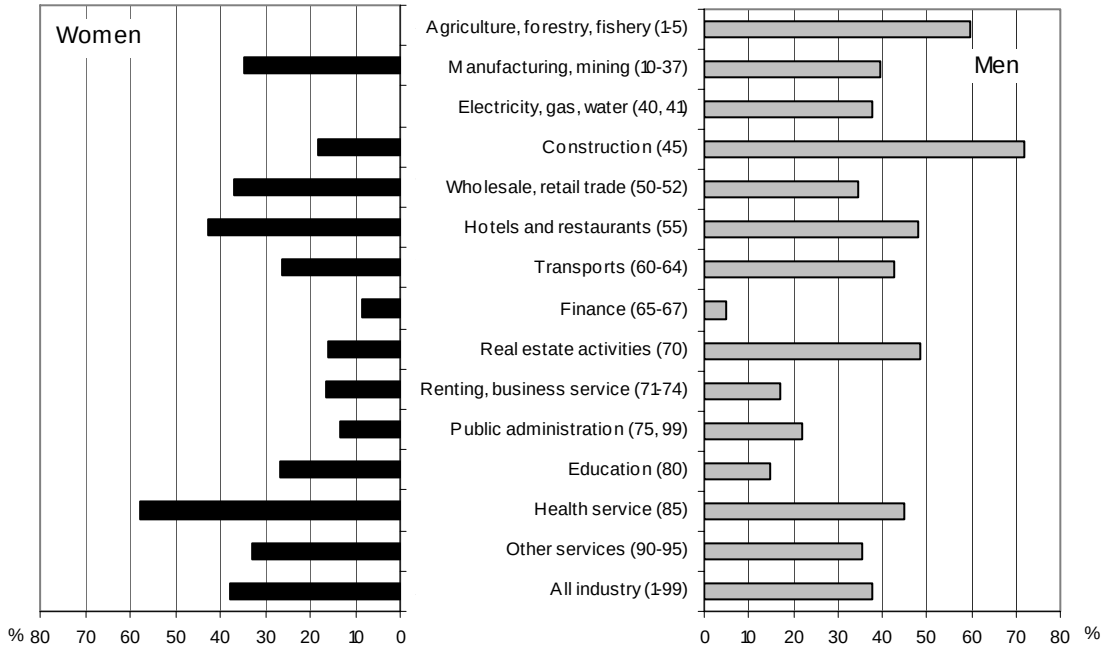
Diagram 6. Heavy lifting by socioeconomic group in 2000-2002. Per cent of employed persons.



3.2.3 Unsuitable working positions

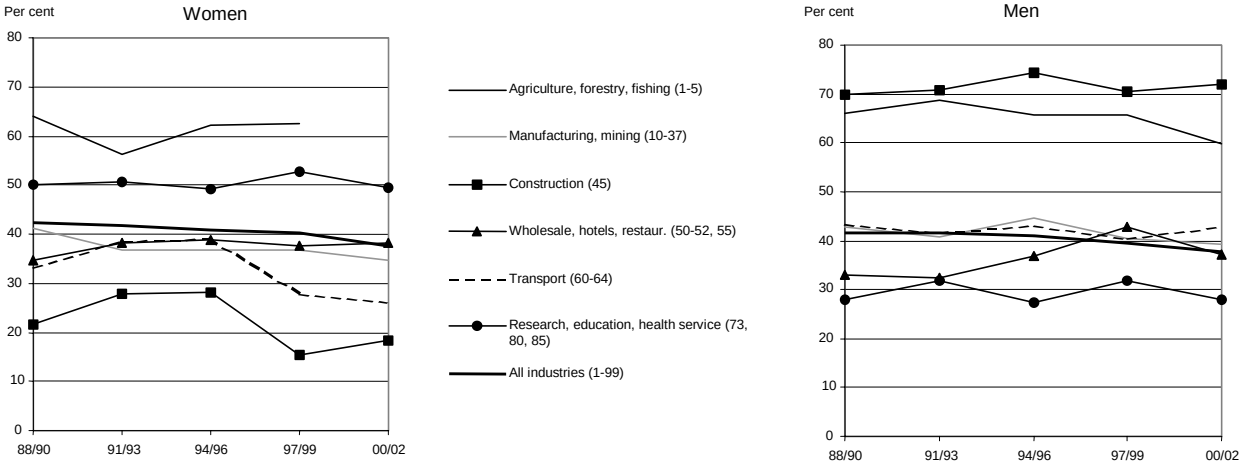
Diagram 7 shows that approximately 40 per cent of employed women and men were exposed to unsuitable working positions in 2000-02. There were substantial differences between the industries, for example, 70 per cent of the men in the construction industry had unsuitable working positions compared to only 5 per cent of the men in the finance industry.

Diagram 7. Unsuitable working positions by sex in 2000-2002. Per cent of employed persons.



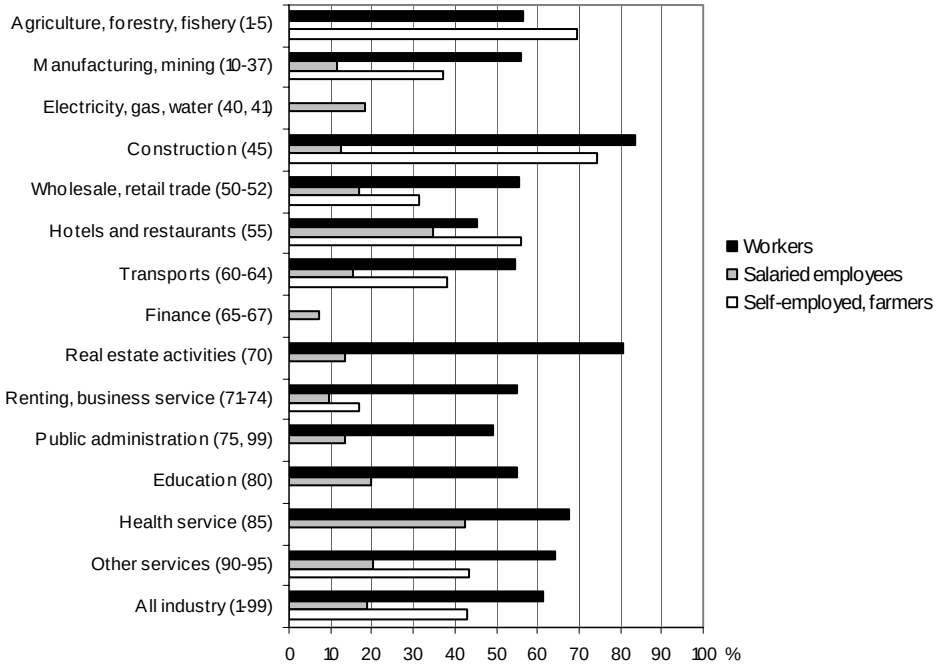
There was a slight decrease in the number of employed men and women with an unsuitable working positions between 1988 and 2002 (*diagram 8*). The number either decreased or remained unchanged in most industries, except for in the wholesale industry and in the hotel and restaurant industry, where it increased.

Diagram 8. Unsuitable working positions in 1988-2002. Per cent of employed persons.



Workers were exposed to unsuitable working positions to a much larger extent than salaried employees in 2000-02, as seen in *diagram 9*. Approximately 80 per cent of workers in the construction industry and in the real estate industry were exposed to unsuitable working positions.

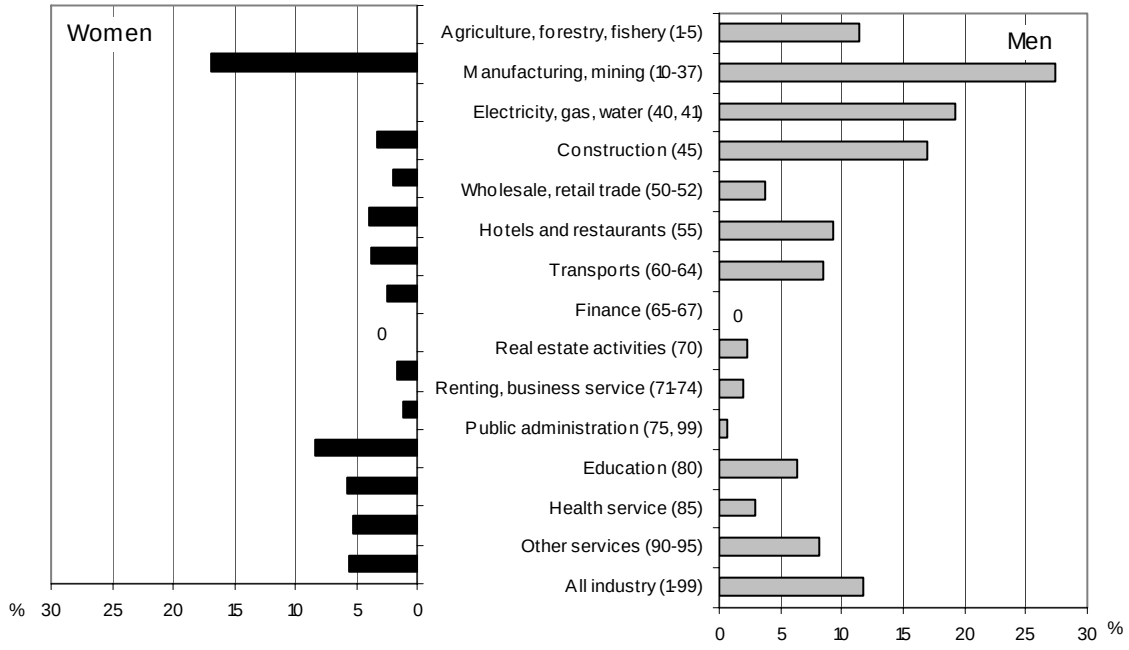
Diagram 9. Unsuitable working positions by socioeconomic group in 2000-2002. Per cent of employed persons.



3.2.4 Deafening noise

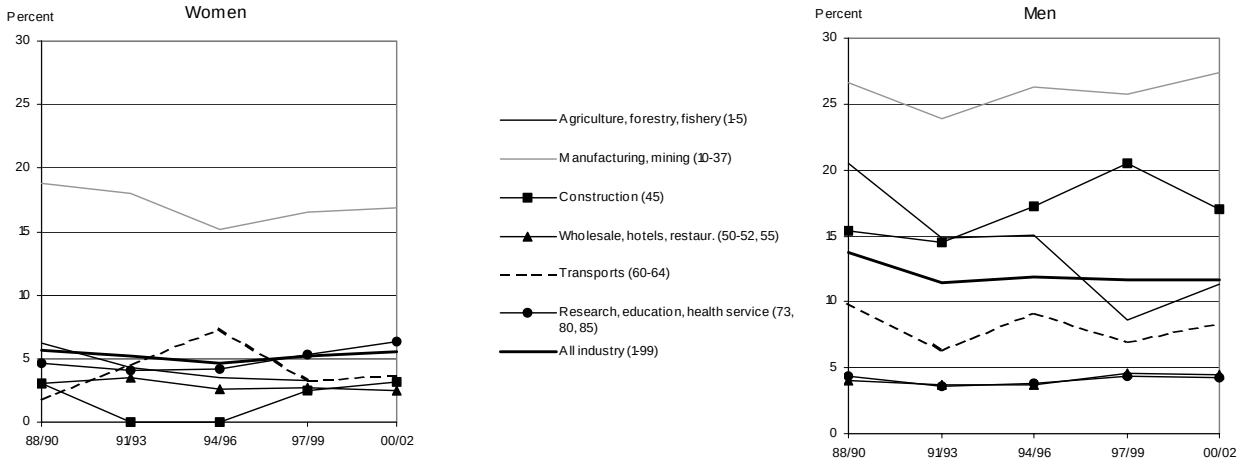
Diagram 10 illustrates that men and women employed in industries producing goods (such as the manufacturing and mining industry) were exposed to deafening noise to a larger extent than those employed in service industries (such as the health service industry) in 2000-02. Twice as many men than women were exposed to deafening noise.

Diagram 10. Exposure to deafening noise by sex in 2000-2002. Per cent of employed persons.



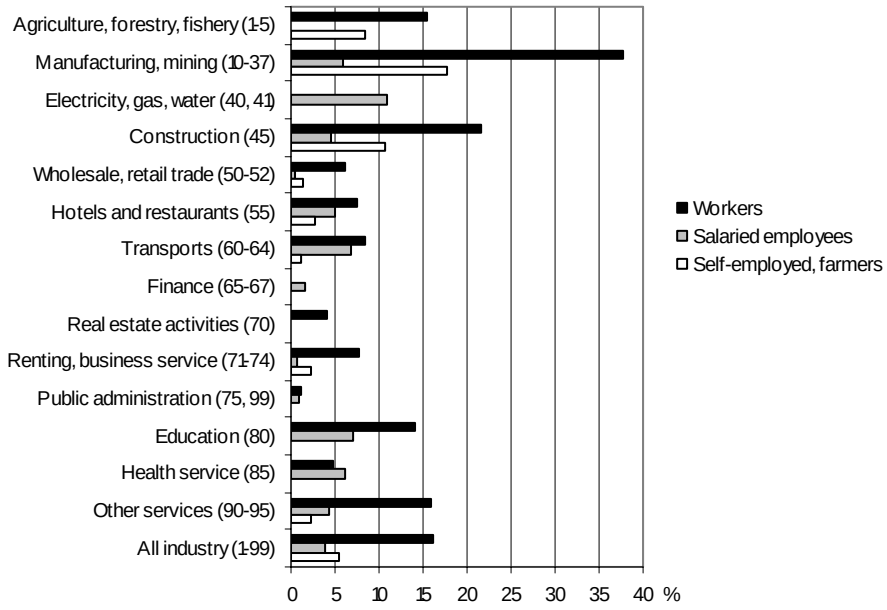
The share of employed men and women that were exposed to deafening noise did not change much overall between 1988 and 2002, as seen in *diagram 11*. Women in the construction industry generally do not perform the same tasks as men, which results in lower values for accidents, noise etc.

Diagram 11. Exposure to deafening noise between 1988-2002. Per cent of employed persons.



Three times as many workers than salaried employees were exposed to deafening noise in 2000-02 (*diagram 12*). The most exposed were workers in the manufacturing and mining industry, where 37 per cent experienced exposure to deafening noise.

Diagram 12. Exposure to deafening noise by socioeconomic group in 2000-2002. Per cent of employed persons.

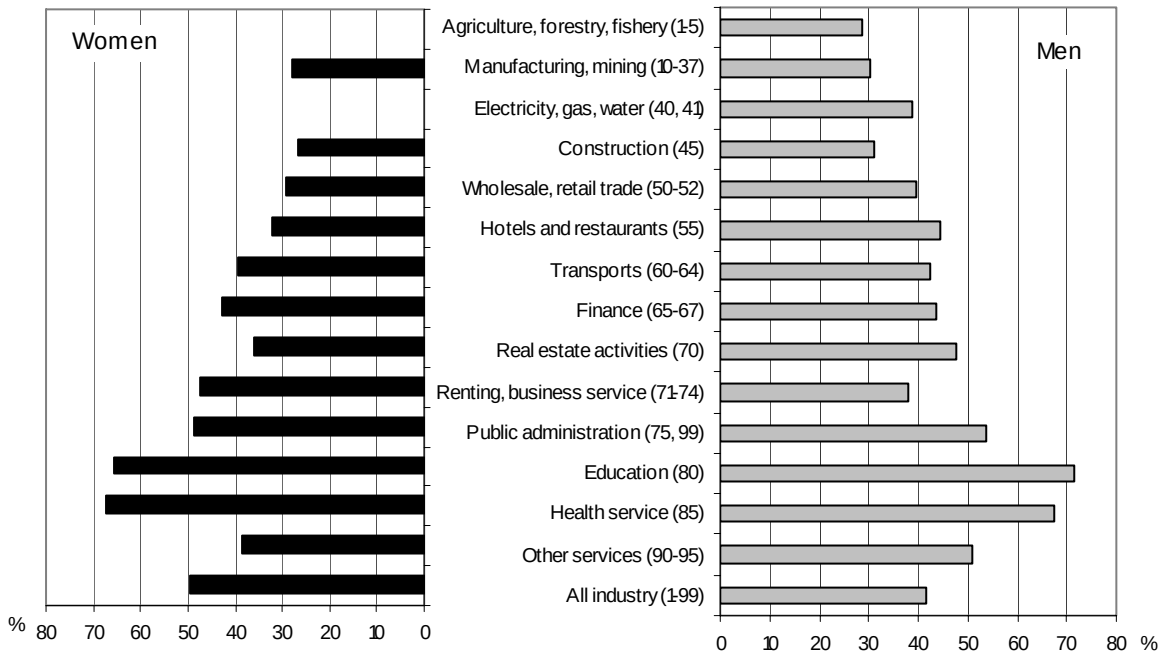


3.3 Psychosocial working environment

3.3.1 Mentally strenuous work

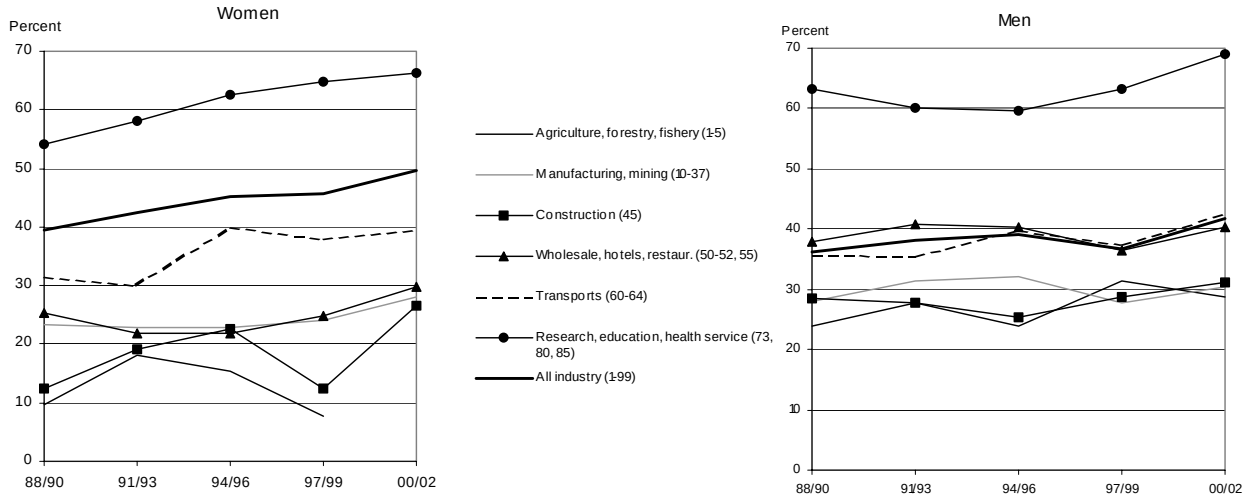
Diagram 13 shows that employed men and women were in general exposed to mentally strenuous work to a lesser degree in the goods-producing industries (e.g. the manufacturing and mining industry) than in the service industries (e.g. the public administration industry) in 2000-02. Women were also more exposed to mentally strenuous work than men.

Diagram 13. Mentally strenuous work by sex 2000-2002. Per cent of employed persons.



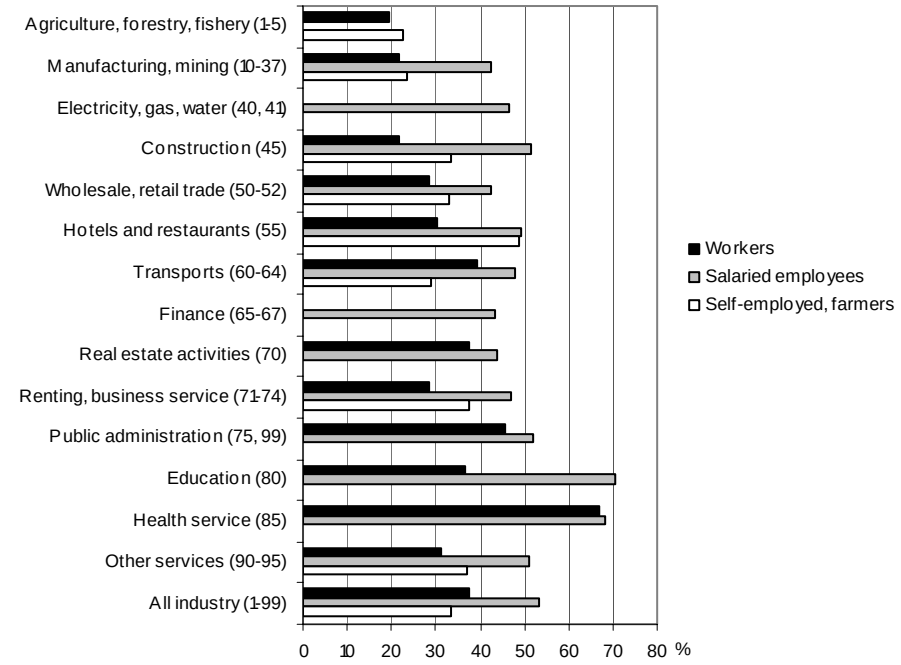
There was an increase in the number of employed men and women exposed to mentally strenuous work between 1988 and 2002 but the increase was much larger for women (*diagram 14*). In fact, there was a change for the worse in all industries.

Diagram 14. Mentally strenuous work between 1988-2002. Per cent of employed persons.



In contrast to the previous indicators on the *physical* working environment, salaried employees experienced mentally strenuous work more often than workers and self employed persons/farmers in 2000-02 (*diagram 15*). Approximately 70 per cent of salaried employees in the education industry and the health service industry were exposed to mentally strenuous work in 2000-02.

Diagram 15. Mentally strenuous work by socioeconomic group in 2000-2002. Per cent of employed persons.



3.3.2 Hectic and monotonous work

Diagram 16 shows that women and men working in the hotel and restaurant industry and in the transport industry, together with women in the manufacturing and mining industry, were the most exposed to hectic and monotonous work in 2000-02. Over 20 per cent of those employed in these industries experienced hectic and monotonous work.

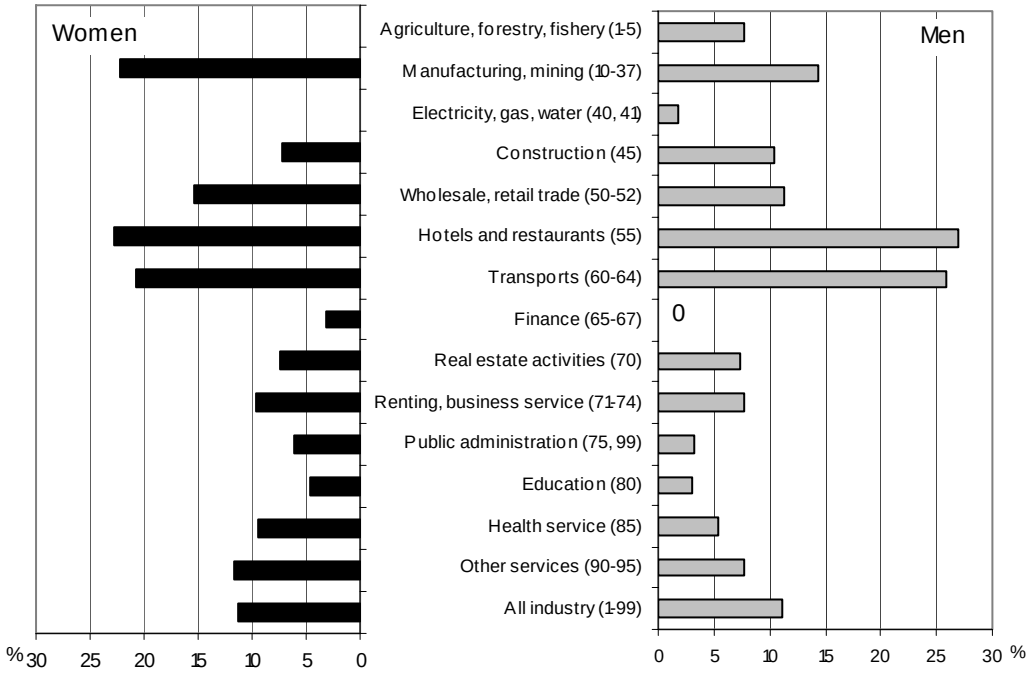
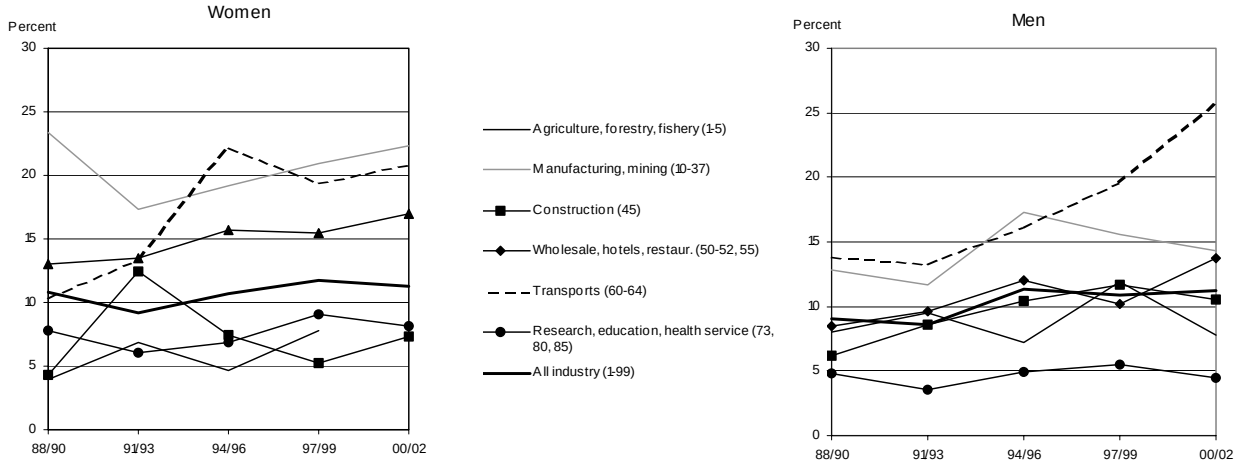


Diagram 16. Hectic and monotonous work by sex in 2000-2002. Per cent of employed persons.

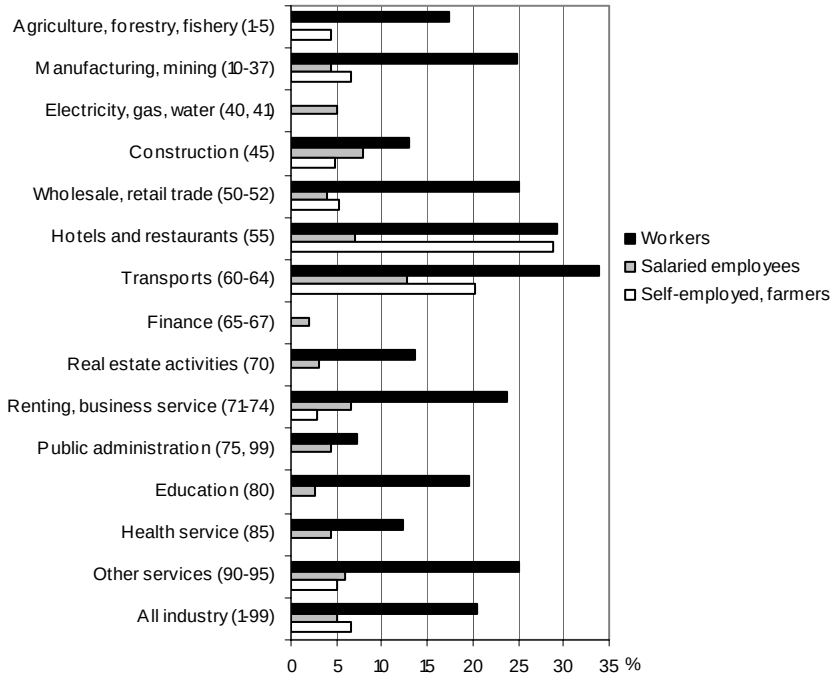
Overall, a small increase of employed persons with experience of hectic and monotonous work can be noticed in *diagram 17*. One exception was in the transport industry, were a sharp increase occurred for both men and women.

Diagram 17. Hectic and monotonous work between 1988-2002. Per cent of employed persons.



There was also a substantial difference regarding hectic and monotonous work between workers and salaried employees in 2000-02 (*diagram 18*). The former were four times more exposed to hectic and monotonous work as the latter.

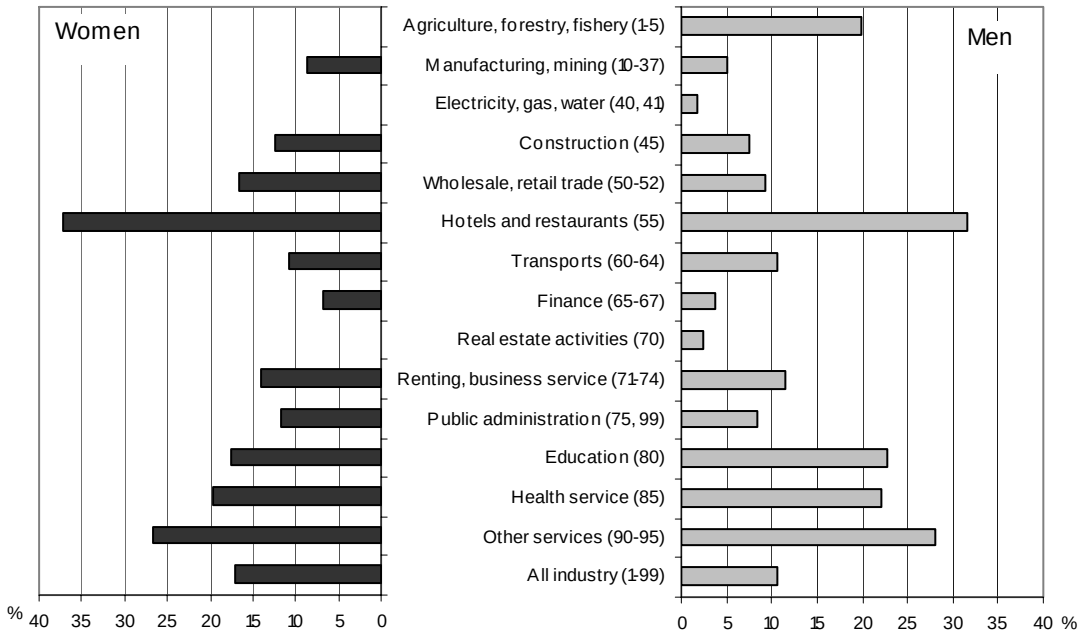
Diagram 18. Hectic and monotonous work by socioeconomic group in 2000-2002. Per cent of employed persons.



3.3.3 Casual work among employees

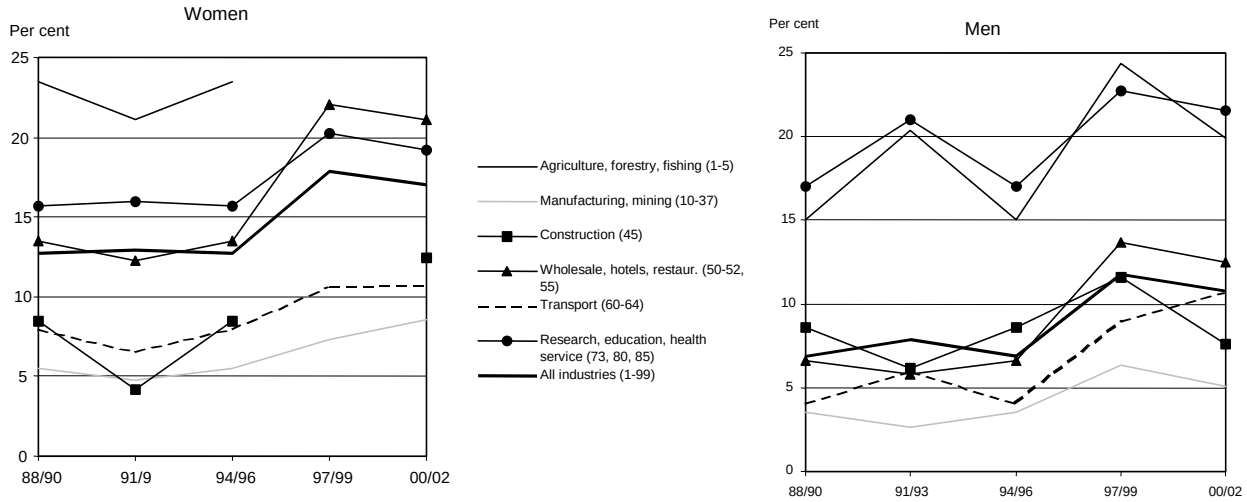
Diagram 19 shows that around a third of employed persons in the hotel and restaurant industry had casual work in 2000-02. In general, women were more often casually employed than men in 2000-02, around 17 per cent of women compared to only 10 per cent of men.

Diagram 19. Casual work among employees by sex 2000-2002. Per cent of employees.



There was an increase in the number of employees with casual work between 1988 and 2002, which is shown in *diagram 20*. The trend is valid for all industries.

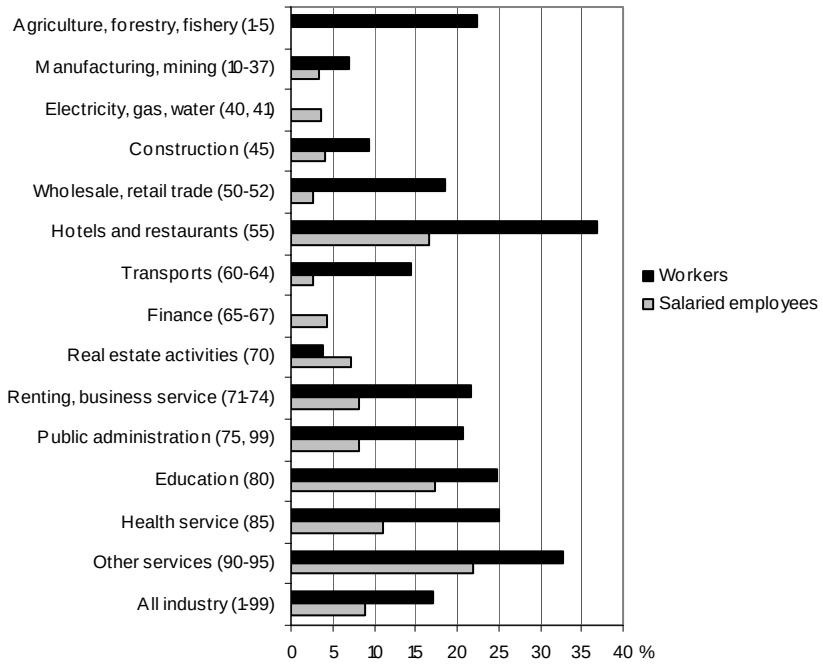
Diagram 20. Casual work among employees between 1988-2002. Per cent of employees.



Note: Data for employed women in the construction industry are missing for 97/99.

Workers were, in general, twice as often employed on a casual basis as salaried employees *(diagram 21)*. A sharp contrast can be seen in the hotel and restaurant industry, where 37 per cent of workers had a casual employment compared to only 17 per cent of salaried employees. Self-employed persons and farmers are not included in the diagram because only employees are included.

Diagram 21. Casual work among employees by socioeconomic group in 2000-2002. Per cent of employees.



4 Health

4.1 Introduction

The perception of health, well-being and the absence of pain are important for the possibility to live a good life. In this context, both subjective and objective definitions of health can be used, even though the subjective is more related to well-being. However, it is abilities that are of interest when the state of health is studied as a resource for material and social welfare. Impaired hearing and physical ability can, for example, have a negative impact on a person's income or ability to take part in society. In this chapter, unemployed persons are included as a special category.

Indicators in chapter 4

In addition to the diagrams on health in this chapter, see also industry profiles for indicators on health in *chapter 7.1*.

- **Bad state of health**

Answered "*bad*" to the question: How do you consider your state of health?

- **Severe problems because of long illness**

Answered "*long illness*" to the question: Do you have a long-term illness, pains due to an accident, a handicap or other weakness? Also answered "*all the time*" or "*occasionally*" to the question: How often do you have problems due to long illness? Also answered "*severe*" or "*very severe*" to the question: Are the problems insignificant, moderate, severe or very severe?

- **Reduced working capacity because of long illness**

Answered "*long illness*" to the question: Do you have a long illness, pains due to an accident, a handicap or other weakness? Also answered "*to a great extent*" to the question: Does the illness you have result in a reduction in your working capacity to a great extent, to some extent or not at all?

- **Impaired hearing**

Answered "*no*" to the question: Are you able to hear what is said in a conversation between several persons without difficulty (with or without hearing aid)?

- **Visited a dentist for the last year**

Answered "*less than 3 months ago*" or "*3 months ago but less than 1 year ago*" to the question: When was the last time you visited a dentist or dental hygienist?

- **Everyday smoker**

Answered "*yes*" to the question: Do you smoke daily?

- **Obesity**

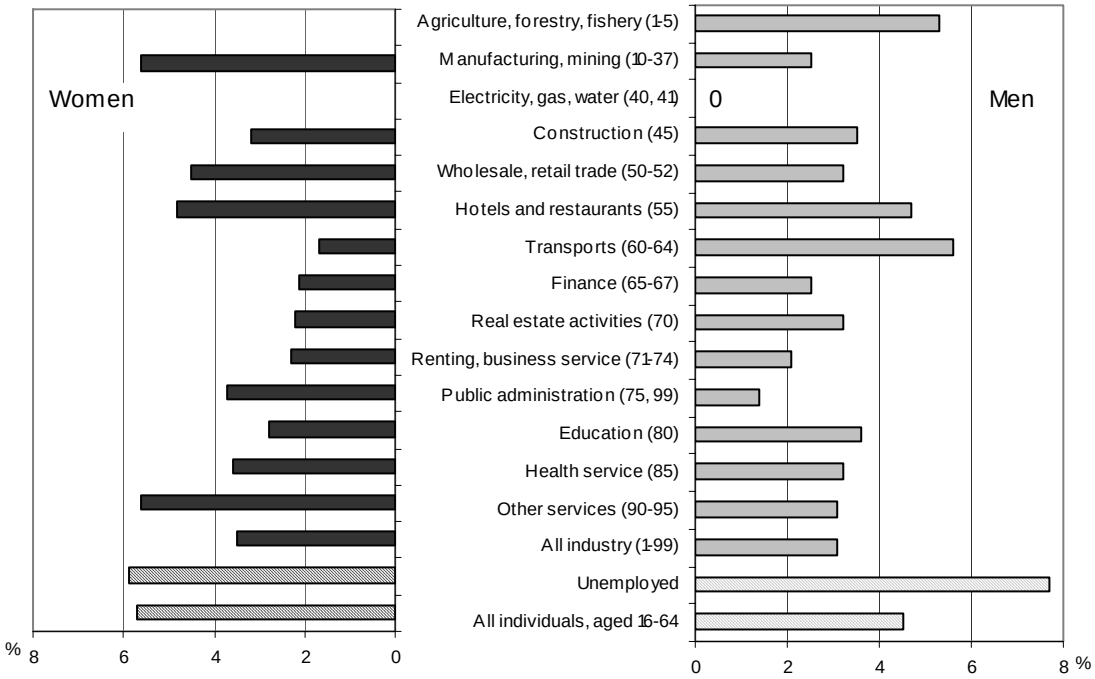
The person has a Body Mass Index (BMI) of 30 or more. BMI is measured by this equation: Weight (kilogram) / Height^2 (metre).

4.2 Public health

4.2.1 Bad state of health

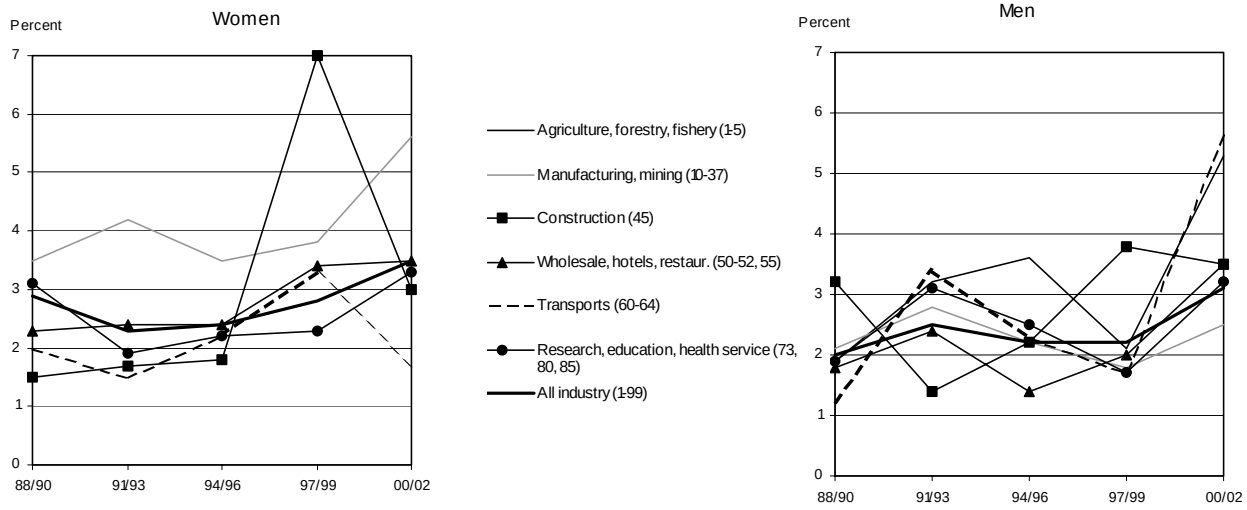
It was more common to consider the health as bad among unemployed persons and among all individuals than among employed persons in all industries, as seen in *diagram 22*. However, there were differences between the industries. For example, 5.5 per cent of men in the transport industry considered their health to be bad compared to only 1.5 per cent of men working in public administration. Almost 8 per cent of unemployed men considered their state of health to be bad compared to almost 6 per cent of unemployed women.

Diagram 22. Bad state of health by sex 2000-2002. For industries, per cent of employed persons.



The amount of employed men who considered their state of health to be bad increased in all industries between 1988 and 2002, as seen in *diagram 23*, but this was only a minor increase. A small increase could also be noticed among women overall but variations between the industries were considerable.

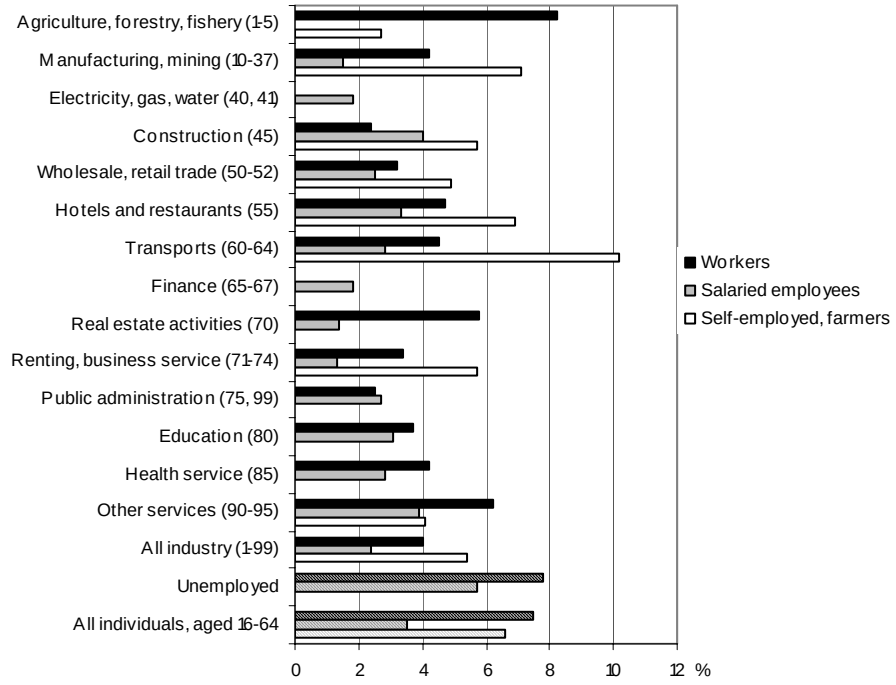
Diagram 23. Bad state of health between 1988-2002. Per cent of employed persons.



Note: Women in the agricultural industry have been removed from the diagram because of unreliable data as have women in the construction industry due to unreliable data for 97/99.

Salaried employees considered their state of health as bad to a lesser degree than workers and self-employed persons/farmers, as seen in *diagram 24*.

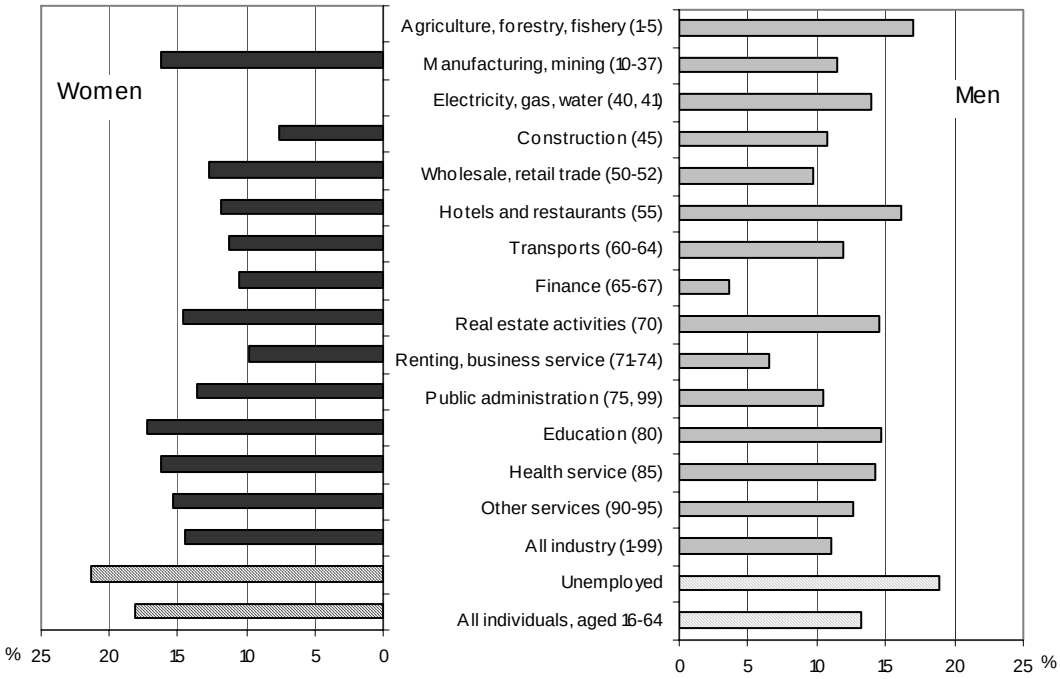
Diagram 24. Bad state of health by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



4.2.2 Severe health problems because of long illness

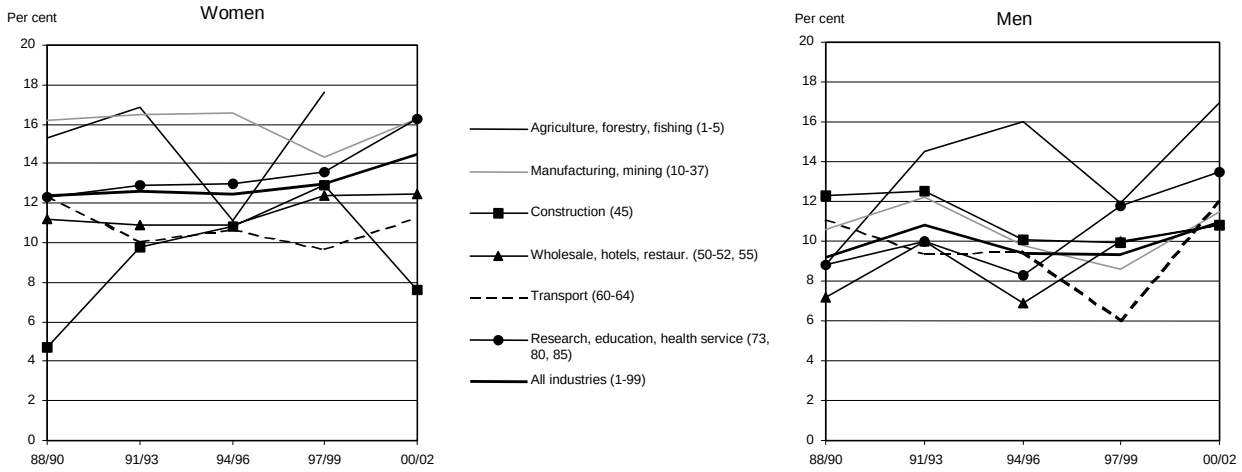
Diagram 25 shows that employed women overall suffered severe problems because of long illness more often than employed men in 2000-02, almost 15 per cent compared to 11 per cent. The largest difference between industries was between men working in the hotel and restaurant industry and men in the finance industry. A higher share of the unemployed had severe problems because of long illness, about a fifth of unemployed women and men.

Diagram 25. Severe health problems by sex 2000-2002. For industries, per cent of employed persons.



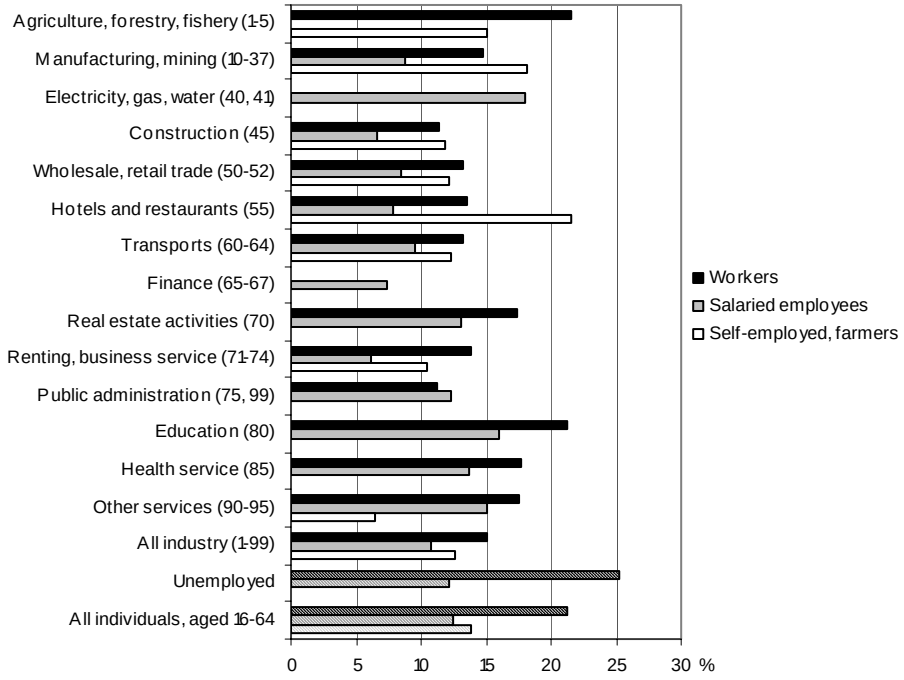
The number of employed persons with severe problems because of long illness increased between 1988 and 2002, according to *diagram 26*. However, regarding the specific industries, an apparent increase has only occurred in the wholesale industry, the hotel and restaurant industry and in the research, education and health service industry.

Diagram 26. Severe health problems between 1988-2002. Per cent of employed persons.



As shown in *diagram 27*, 15 per cent of employed workers had severe problems compared to 11 per cent of salaried employees and 13 per cent of self-employed persons/farmers. As much as one fifth of workers in the education industry and self-employed persons/farmers in the hotel and restaurant industry had severe problems because of long illness in 2000-02.

Diagram 27. Severe health problems by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



4.2.3 Reduced working capacity because of long illness

Employed persons with a reduced working capacity because of long illness were more common among women than men in 2000-02 (*diagram 28*). As much as 11 per cent of women in the Other services industry had a reduced working capacity because of long illness. Persons having a reduced working capacity were more common among unemployed, which can perhaps be seen as an explanation as to why they are unemployed.

Diagram 28. Reduced working capacity by sex 2000-2002. For industries, per cent of employed persons.

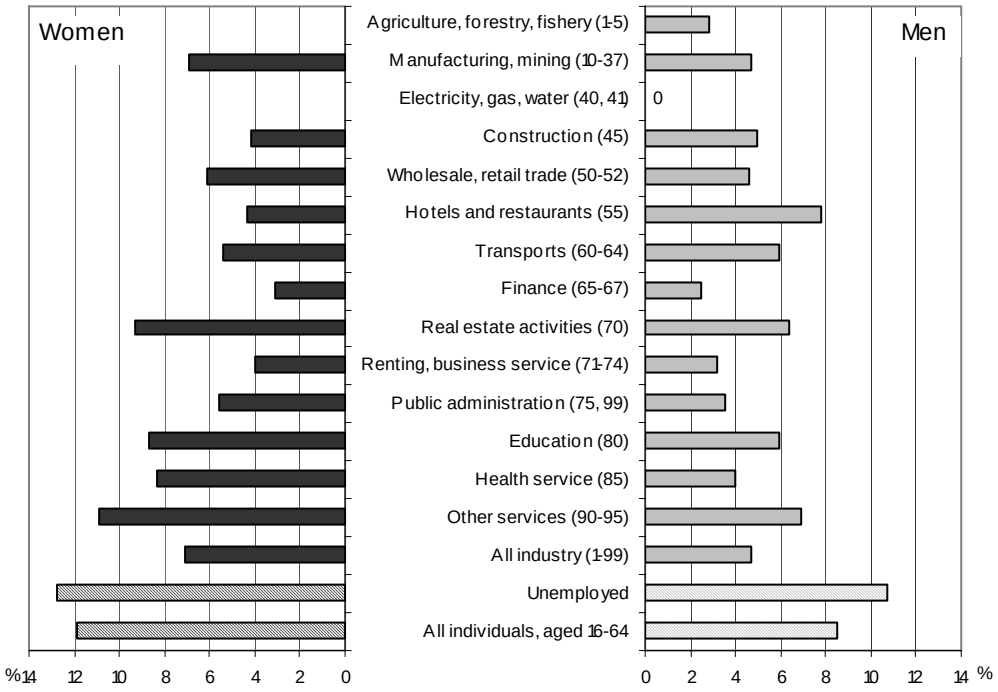
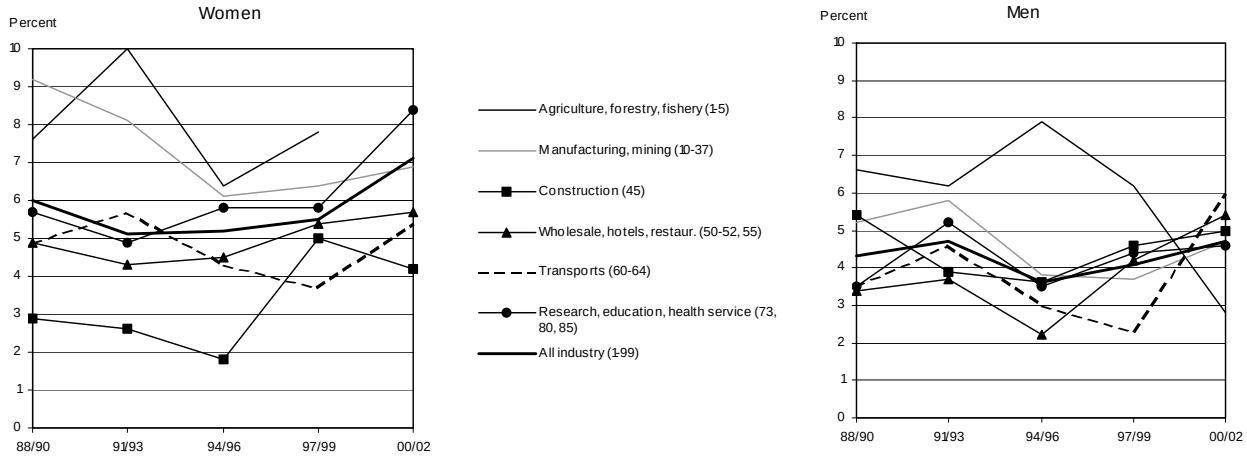


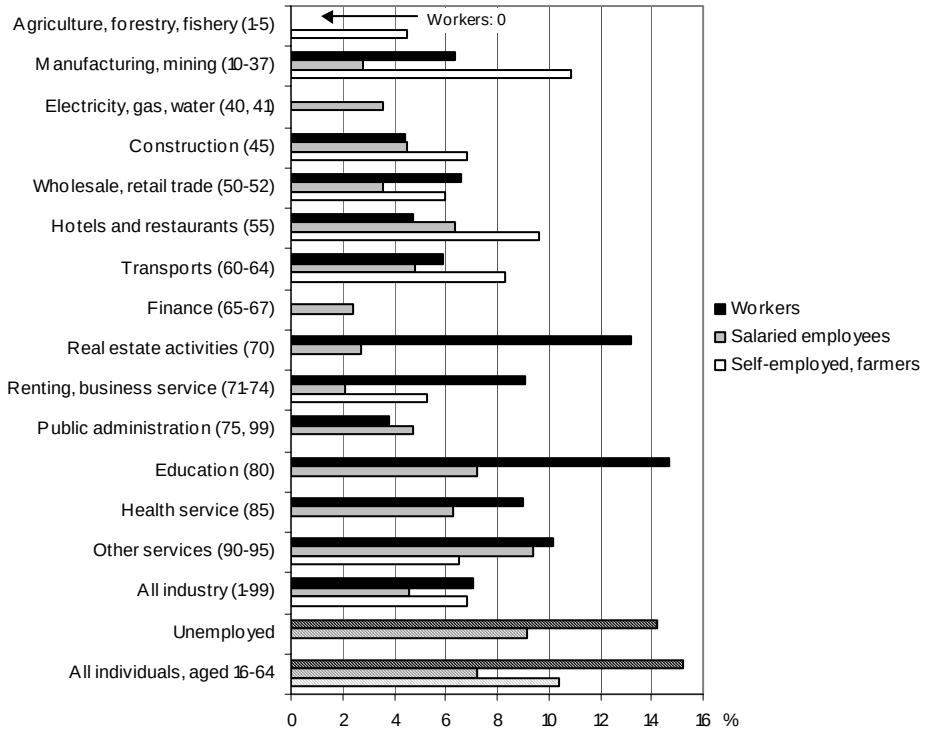
Diagram 29 shows that the number of employed men with a reduced working capacity because of long illness was fairly constant between 1988 and 2002, while the number of employed women increased somewhat after 1991/93.

Diagram 29. Reduced working capacity between 1988-2002. Per cent of employed persons.



As with many of the other health indicators shown above, workers were more likely to have a reduced working capacity than salaried employees in 2000-02 (*diagram 30*). As many as 15 per cent of workers in the education industry had a reduced working capacity.

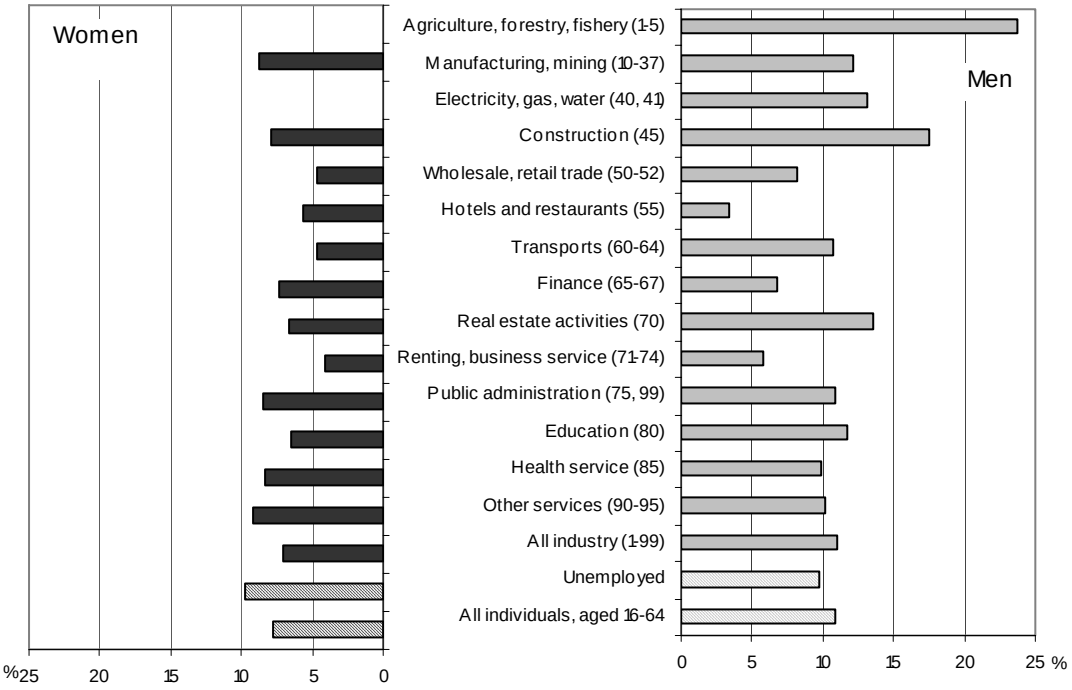
Diagram 30. Reduced working capacity by socioeconomic group by 2000-2002. For industries, per cent of employed persons.



4.2.4 Impaired hearing

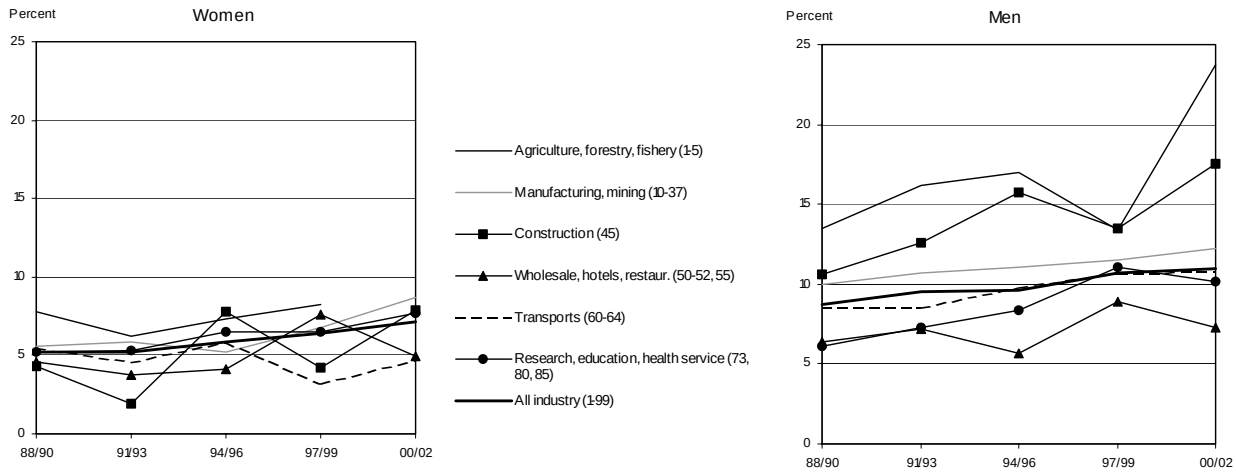
There were fairly small differences regarding impaired hearing between employed women working in the different industries in 2000-02 (*diagram 31*). Employed men, on the other hand, showed more variation. Almost 18 per cent of men in the construction industry had impaired hearing compared to only 3 per cent in the hotel and restaurant industry. Age is an important factor for this indicator, i.e. impaired hearing is more common among older persons.

Diagram 31. Impaired hearing by sex in 2000-2002. For industries, per cent of employed persons.



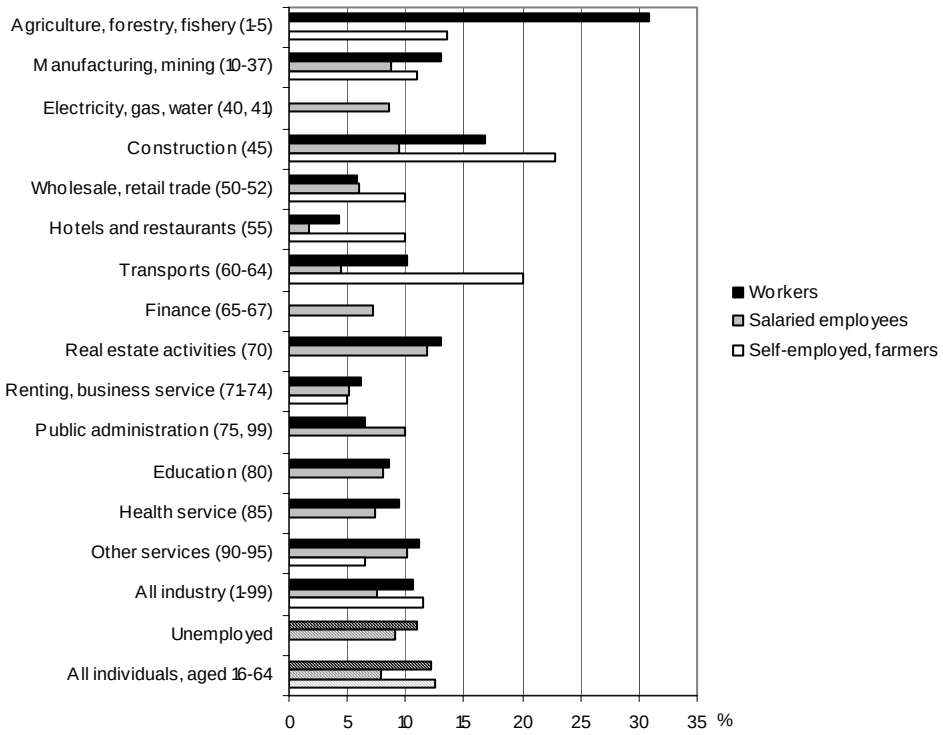
Employed men and women with impaired hearing increased somewhat between 1988 and 2002, as seen in *diagram 32*. There was a noticeable increase for men in the construction industry.

Diagram 32. Impaired hearing between 1988-2002. Per cent of employed persons.



Impaired hearing was a larger problem for workers and self-employed persons/farmers than for salaried employees in 2000-02 *(diagram 33)*. As many as 23 per cent of self-employed persons/farmers in the construction industry had impaired hearing in 2000-02.

Diagram 33. Impaired hearing by socioeconomic group in 2000-2002. For industries, per cent of employed persons.

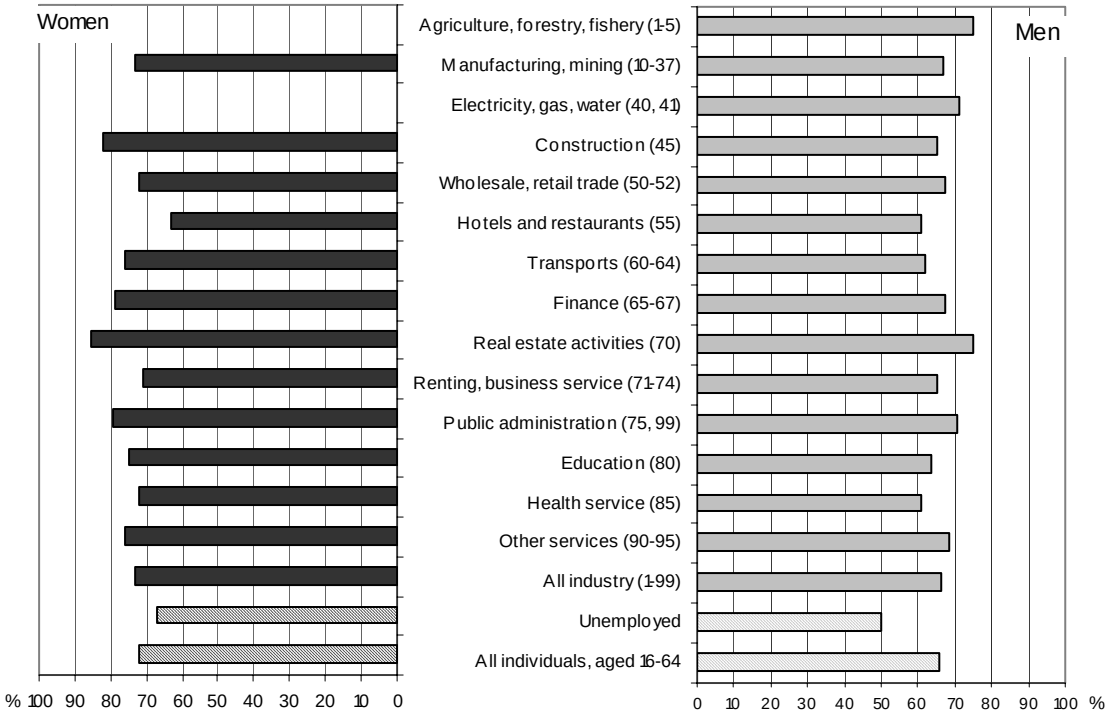


4.3 Dental care

4.3.1 Visits to the dentist during the last year

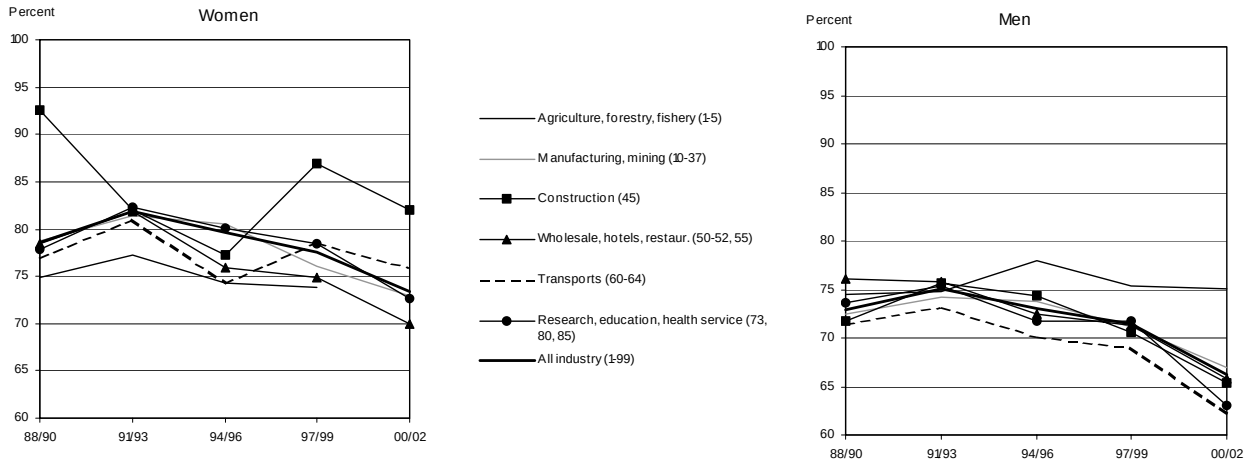
Employed men and women in the real estate industry were the most frequent visitors to the dentist in 2000-02, as shown in *diagram 34*. Visits were least frequent for employed persons in the hotel and restaurant industry.

Diagram 34. Persons visiting a dentist during the last year by sex in 2000-2002. For industries, per cent of employed persons.



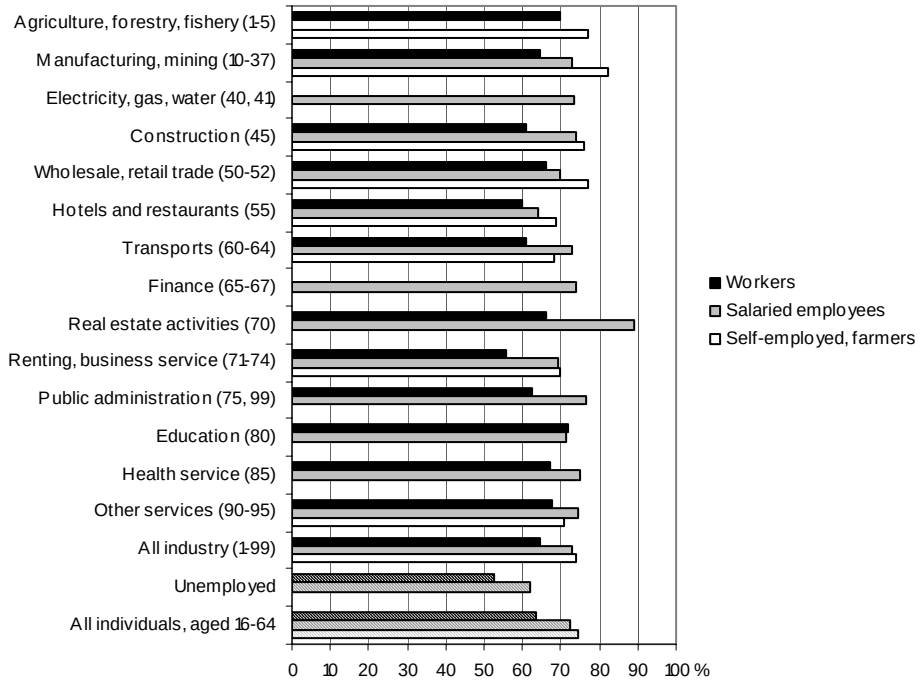
A clear decline can be seen for all industries in the number of employed men and women that have visited a dentist (*diagram 35*). The decrease was the largest for women in the construction industry, from 93 (in 1988-90) to 82 per cent (in 2000-02).

Diagram 35. Persons visiting a dentist during the last year between 1988-2002. Per cent of employed persons.



Salaried employees and self-employed persons/farmers visited the dentist more often than workers in 2000-02 (*diagram 36*). For example, 90 per cent of salaried employees in the real estate industry made a visit during the last year, compared to 66 per cent of workers.

Diagram 36. Persons visiting a dentist during the last year by socioeconomic group in 2000-2002. For industries, per cent of employed persons.

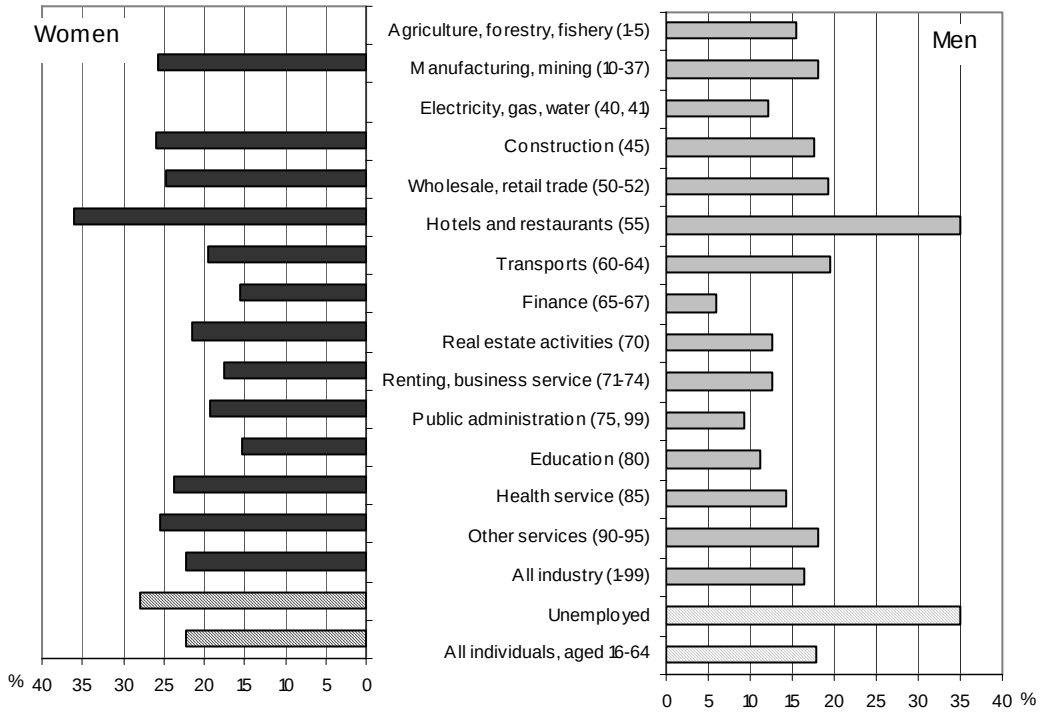


4.4 Smoking habits

4.4.1 Everyday smoker

22 per cent of women in all industries were everyday smokers in 2000-02, compared to 17 per cent of the men which can be seen in *diagram 37*. One third of employed men and women in the hotel and restaurant industry smoked daily. Twice as many unemployed men smoked compared to employed men. See also *diagram 86* in *chapter 7.2.2*, which shows everyday smoking by educational level.

Diagram 37. Everyday smoker by sex in 2000-2002. For industries, per cent of employed persons.



The apparent positive trend of a reduction in the number of daily smokers can be observed between 1988-2002 in *diagram 38*. Women in the construction industry have varied considerably between the years.

Diagram 38. Everyday smoker between 1988-2002. Per cent of employed persons.

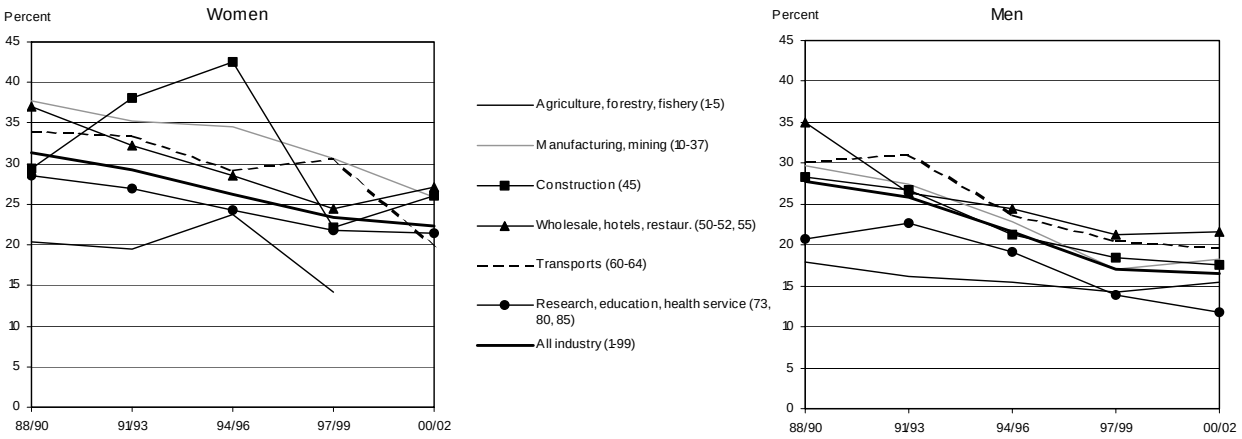
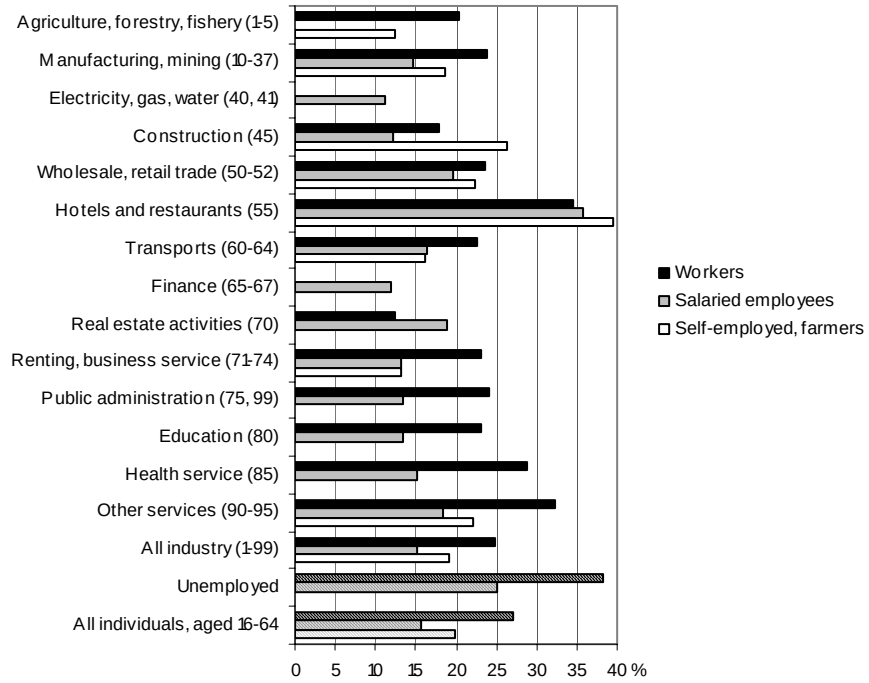


Diagram 39 shows that everyday smoking was generally more common amongst employed workers than salaried employees in 2000-02, 25 per cent compared to 15 per cent. However, the relationship between workers and salaried employees was the opposite in the hotel and restaurant industry, which was also the industry with the highest number of everyday smokers.

Diagram 39. Everyday smoker by socioeconomic group 2000-2002. For industries, per cent of employed persons.

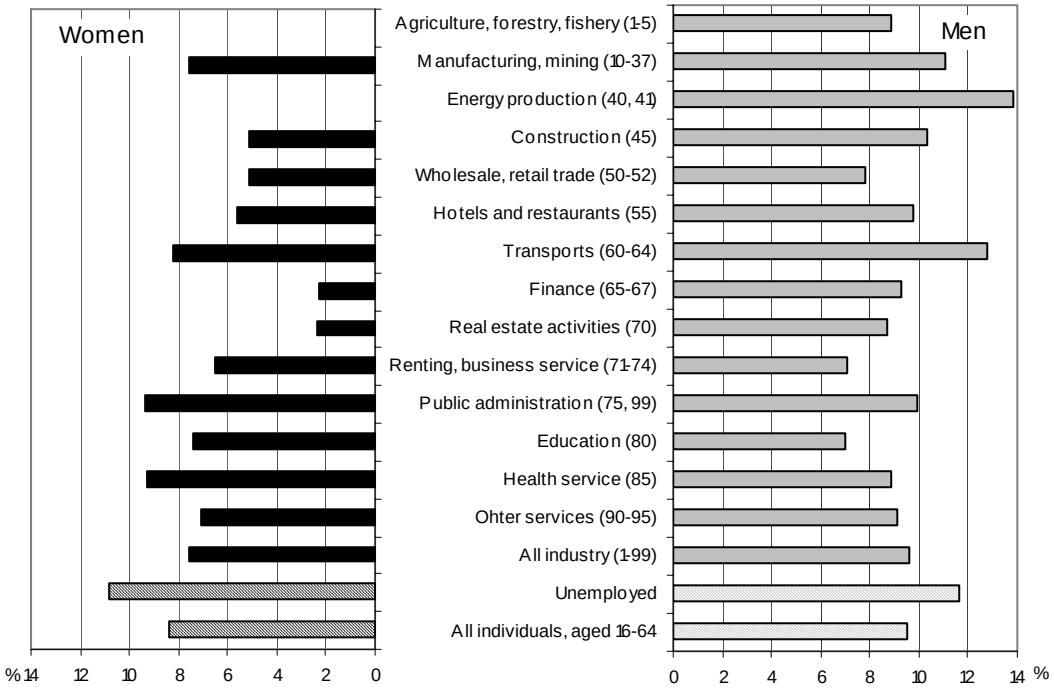


4.5 Weight problems

4.5.1 Obesity

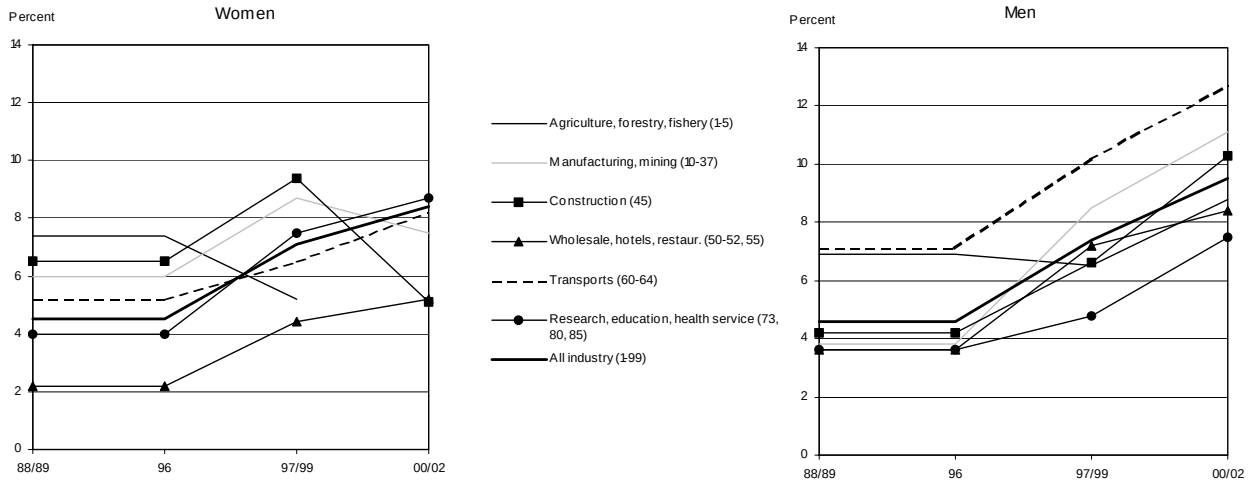
Obesity was most common for employed men in the energy industry, followed by men in the transport industry and amongst unemployed men, with 14, 13 and 12 per cent respectively (*diagram 40)*. For women, it was most common among the unemployed followed by those working in public administration and the public service sector. Obesity was found in industries overall to approximately the same extent as in the population in general.

Diagram 40. Obesity by sex in 2000-2002. For industries, per cent of employed persons.



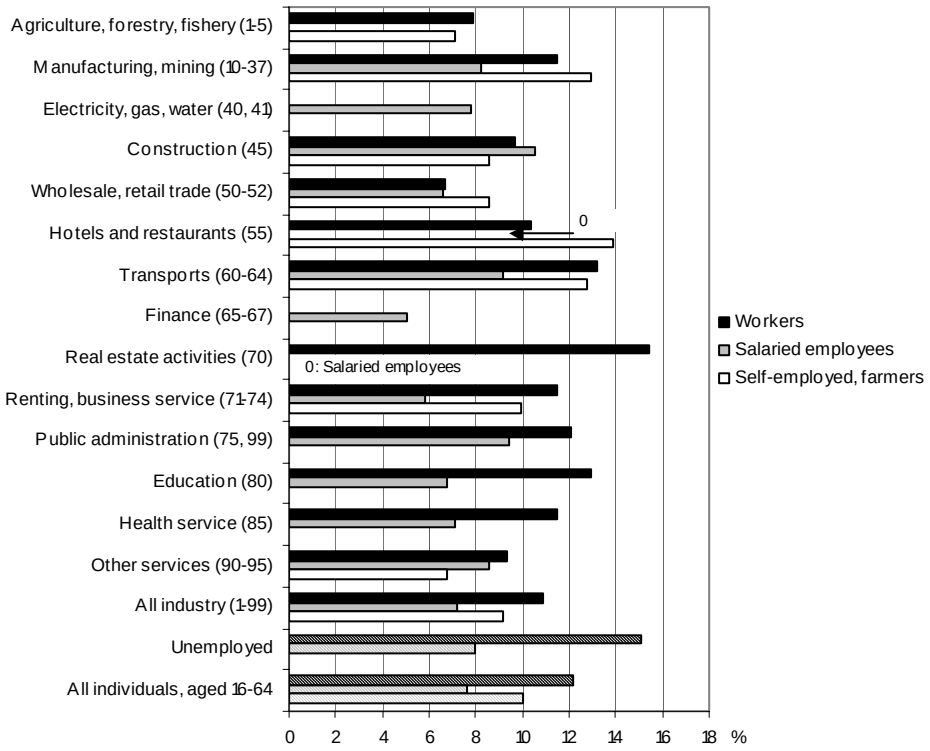
An increase in the level of obesity has occurred during 1988-2002 in all industries except for women in the agricultural, forestry, fishing industry and the construction industry (*diagram 41*). The highest increase of obesity was found among men in the manufacturing and mining industry, from 4 to 11 per cent.

Diagram 41. Obesity between 1988-2002. Per cent of employed persons.



As is shown in *diagram 42,* obesity was more common among workers and self-employed persons/farmers than among salaried employees in 2000-02. Twice as many workers were obese in the renting/business services industry compared to salaried employees.

Diagram 42. Obesity by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



5 Financial problems and material assets

5.1 Introduction

Income is clearly an important measurement of welfare. However, it is not possible to automatically equalize a high income with a good quality of life. For example, a high income can also be associated with a high workload and high stress levels. But it is usually assumed that the level of income varies in correlation to factors such as work capacity, good health, good education etc.

Financial problems are related to the monetary resources of the household. Material assets represent the more durable assets such as cars and weekend/second homes that the household has access to. The unemployed are also included in this chapter as a special category.

Indicators in chapter 5

In addition to the diagrams on financial problems and material assets in this chapter, see also industry profiles for indicators on financial problems and material assets in *chapter 7.1*.

● **Economic problems during the past 12 months**
Answered "*yes*" to the question: Have you during the last 12 months had problems with the running expenses for food, rent and bills etc?

● **No cash reserve of SEK 13 000 in one week**
Answered "*no*" to the question: Are you able to get hold of SEK 13 000 in one week in the case of a sudden and unexpected situation? The money can be obtained either via withdrawal from a bank account or by borrowing money from a friend, family member, relative or bank.

● **Access to weekend/second home**
Answered "*yes*" to the question: Have you had access to a weekend/second home for a few weeks of your vacation? It does not matter if the house is owned, rented or borrowed.

● **Holiday trip during the last year**
Answered "*yes*" to the question: Have you completed at least one week long vacation or other pleasure trip during the past 12 months?

● **Access to car in the household**
Answered "*yes*" to the question: Does someone in the household have access to a car?

● **Overcrowded living conditions**
The household is considered overcrowded unless every household member has their own room, not including the kitchen and living room. Cohabiting couples reduces the demand by one room.

5.2 Financial problems

5.2.1 Economic problems

Diagram 43 illustrates the share of employed men and women who have had economic problems during 2000-02. Employed women had generally economic problems more often than men. The difference between the industries was considerable. Employed persons in the hotel and restaurant industry reported having economic problems most often, as many as 26 per cent of men and 25 per cent of women. Employed persons with the least economic problems worked in the finance industry. Almost a third of unemployed persons had economic problems, which was about twice as many as among employed persons. See also *diagram 85* in *chapter 7.2.1*, which shows economic problems by region.

Diagram 43. Persons with economic problems by sex in 2000-2002. For industries, per cent of employed persons.

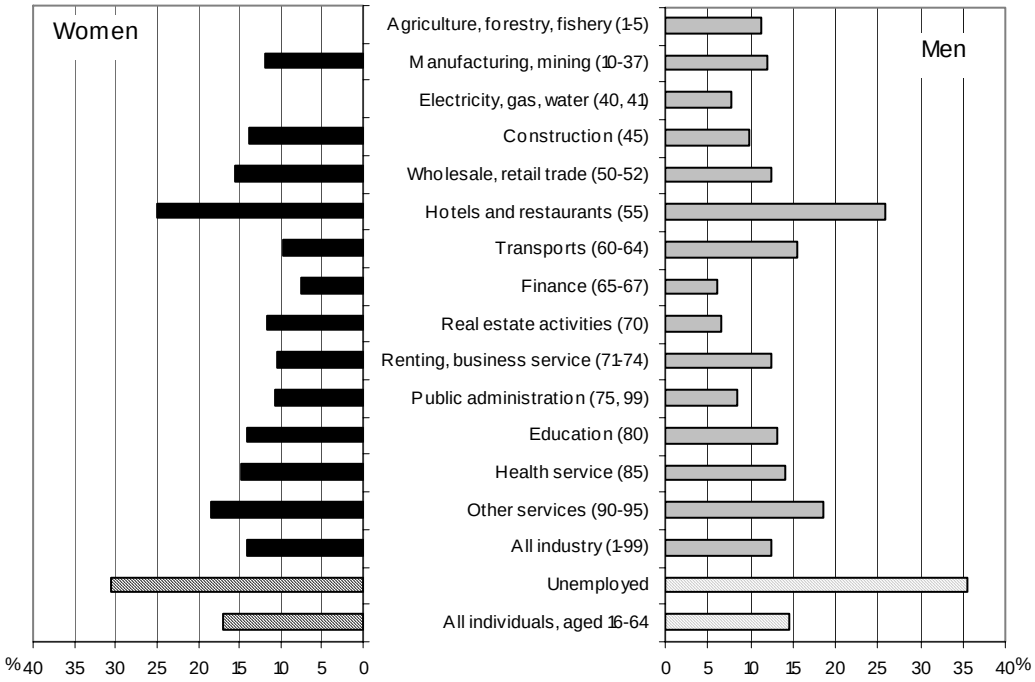
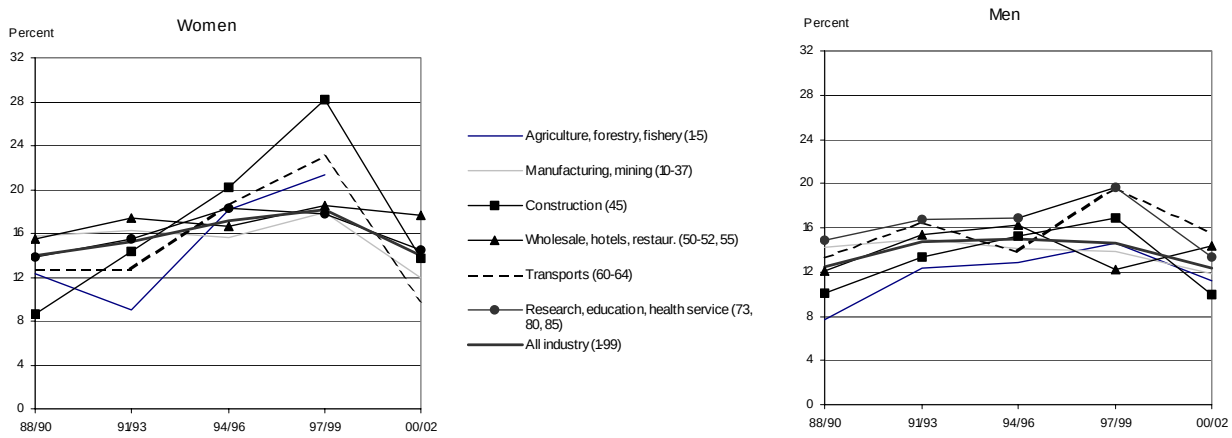


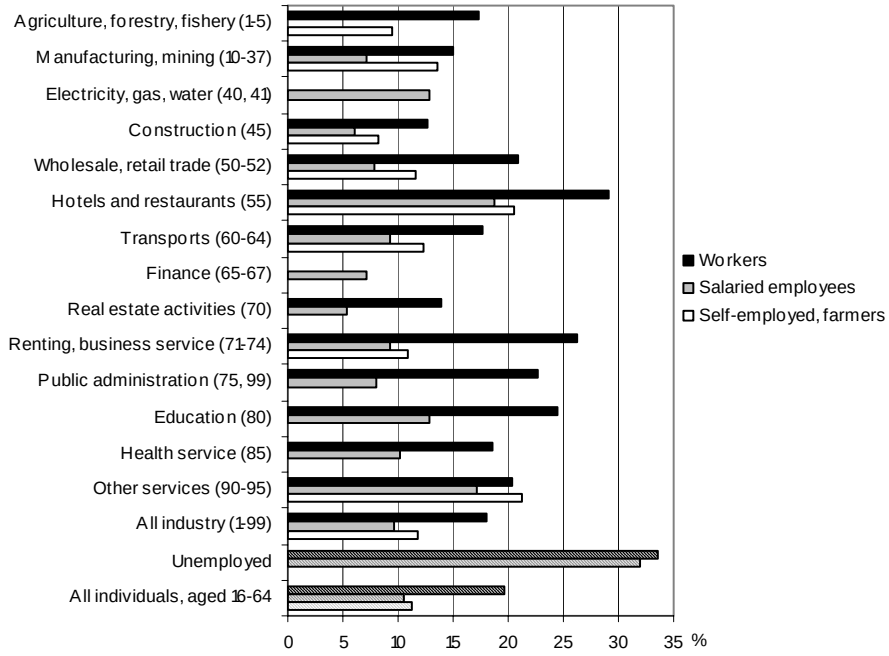
Diagram 44 indicates a somewhat different trend for men and women over the years, as well as differences between the different industries. Employed women having economic problems in the construction industry increased the most between 1988-90 and 1997-99, but the result thereafter shows a more positive trend.

Diagram 44. Persons with economic problems between 1988-2002. Per cent of employed persons.



Workers in general had economic problems more often than salaried employees and self-employed persons/farmers in 2000-02 (*diagram 45)*. Workers in the hotel and restaurant industry had the most problems, 29 per cent.

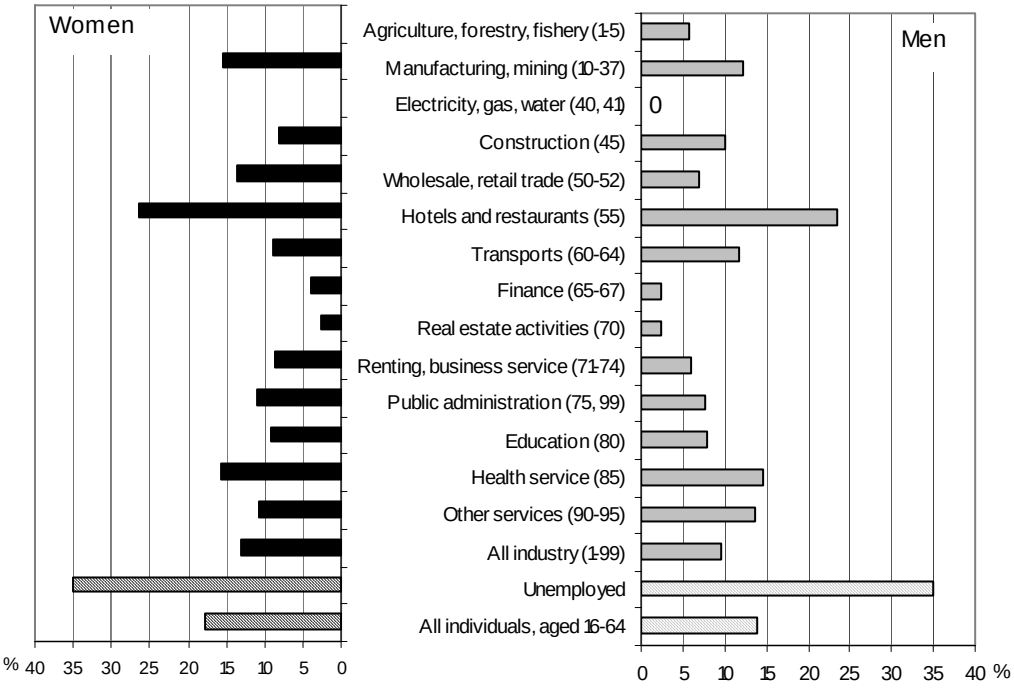
Diagram 45. Persons with economic problems by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



5.2.2 No cash reserve

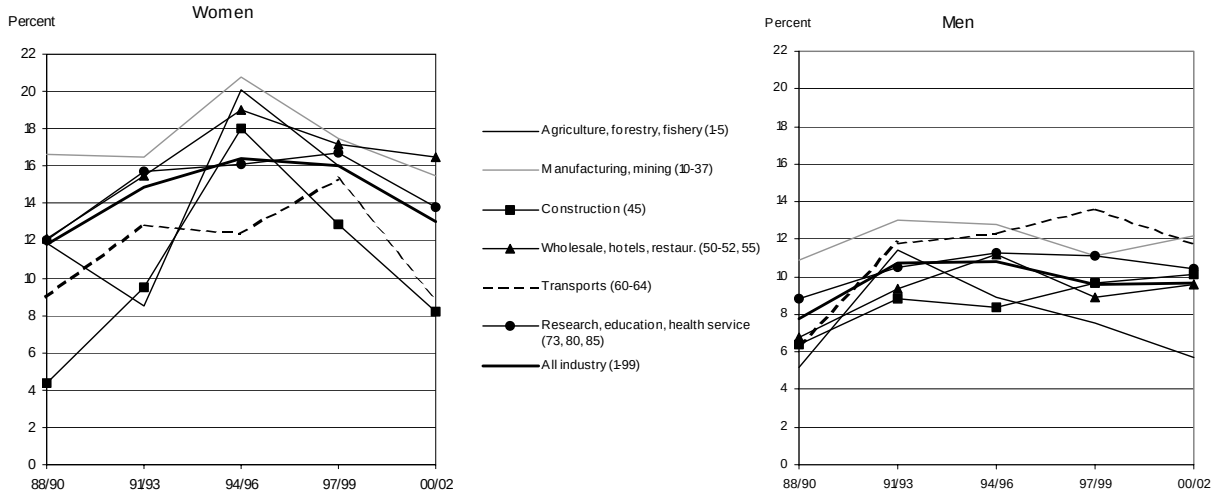
Women generally had less access to a cash reserve than men in 2000-02. There were considerable differences between the industries, as seen in *diagram 46*. A higher per centage of employed men and women in the hotel and restaurant industry than in the other industries did not have a cash reserve. As for persons having economic problems, unemployed persons had significantly less access to a cash reserve than employed persons, perhaps as a consequence of the economic crisis during the nineties.

Diagram 46. Persons with no cash reserve by sex in 2000-2002. For industries, per cent of employed.



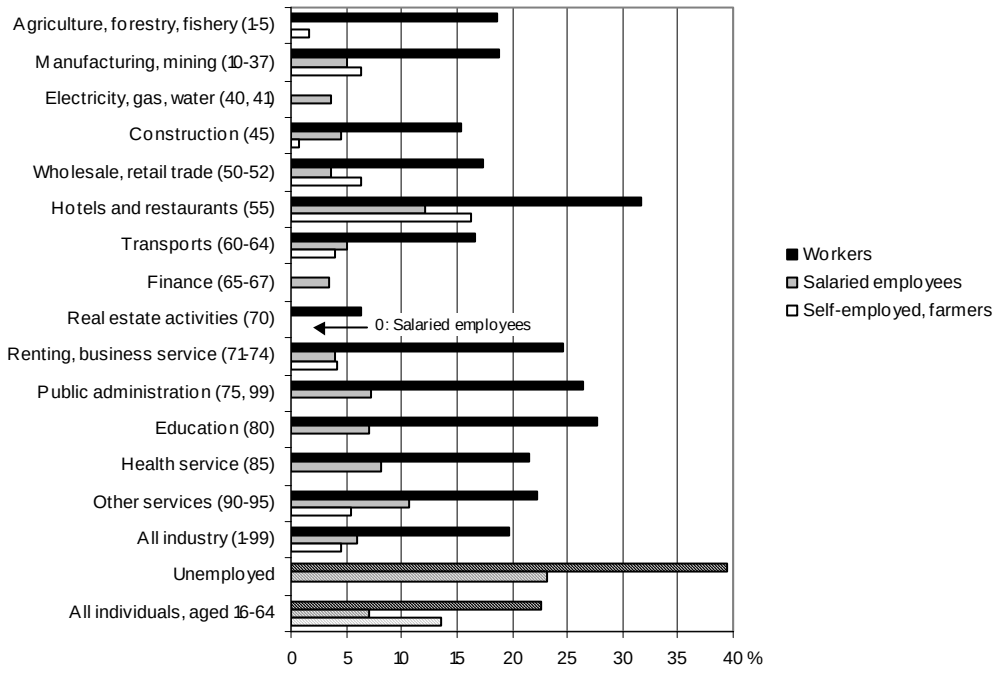
The difference between men and women is shown more clearly in *diagram 47*. There were larger variations for employed women than for men over the years. Since the middle of the 1990s, the trend has been positive for both women and men. However, it is clear in the diagram that there was a much worse situation for women in 1994-96 compared to previously, especially in the manufacturing and mining industry, the wholesale industry, the hotel and restaurant industry and the construction industry.

Diagram 47. Persons with no cash reserve between 1988-2002. Per cent of employed persons.



Also with regards to access to a cash reserve, workers have had the worst situation.
They had less access to a reserve than salaried employees and self-employed persons/farmers in 2000-02, as shown in *diagram 48*. For example, approximately 32 per cent of workers in the hotel and restaurant industry had no access to a cash reserve of SEK 13 000.

Diagram 48. Persons with no cash reserve by socioeconomic group in 2000-2002. For industries, per cent of employed persons.

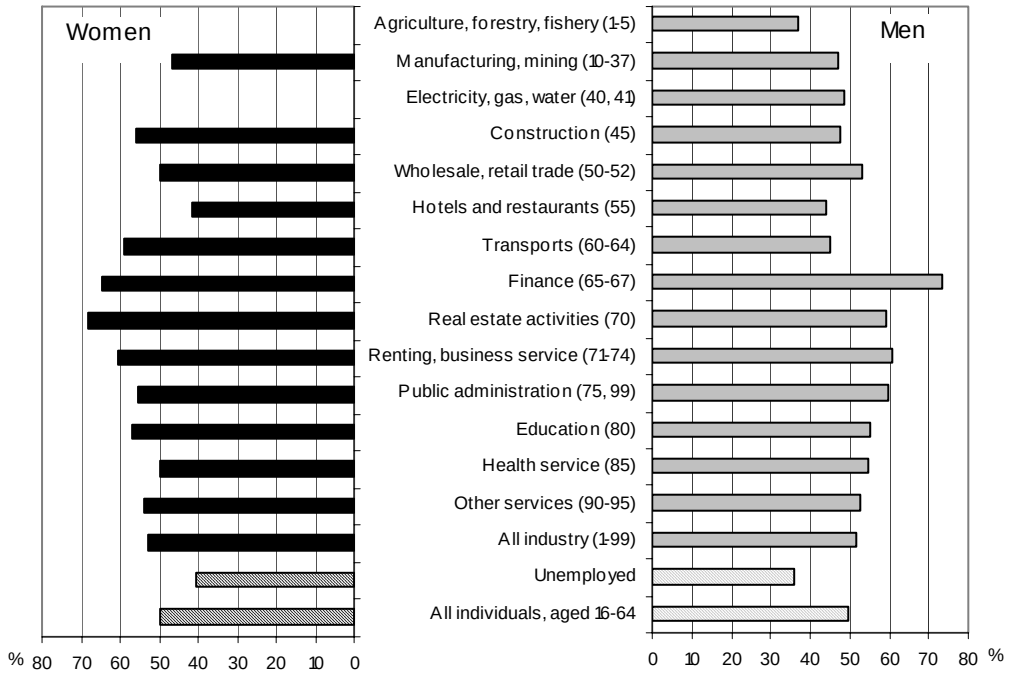


5.3 Material assets

5.3.1 Access to weekend/second home

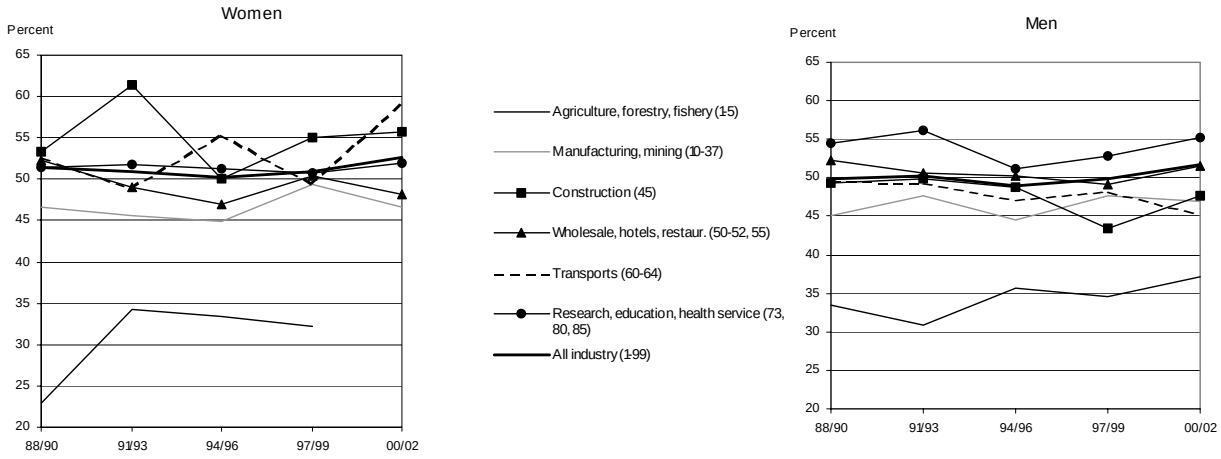
Generally over 50 per cent of persons had access to a weekend/second home in 2000-02, as illustrated in *diagram 49*. Women working in the real estate industry and men in the finance industry had the greatest access. The largest difference between men and women was in the construction industry, the transport industry and the real estate industry, where women had more access to a second home. However, more employed men than women in the finance industry had access to a second home.

Diagram 49. Access to weekend/second home by sex in 2000-2002. For industries, per cent of employed persons.



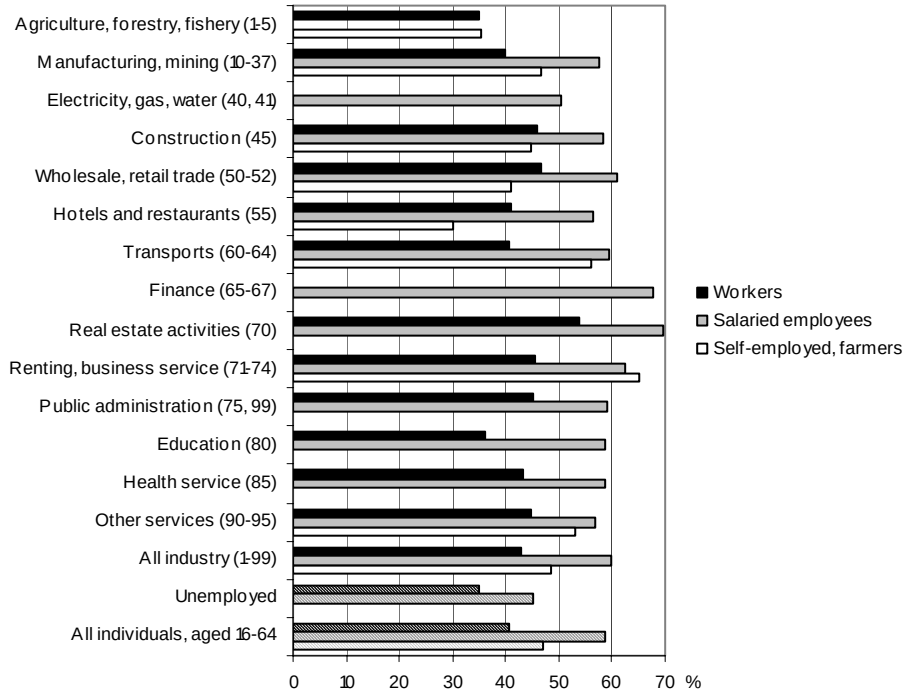
The number of employed men and women with access to a weekend/second home has fluctuated around 50 per cent in the period from 1988 to 2002 (*diagram 50*). As could be expected, men and women in the agricultural, forestry and fishing industry had much less access to a weekend/second home than those employed in other industries.

Diagram 50. Access to weekend/second home between 1988-2002. Per cent of employed persons.



More salaried employees than workers and self-employed persons/farmers had access to a weekend/second home during 2000-02, as shown in *diagram 51*. Farmers perhaps do not have the same need for a weekend/second home because they tend to already live in the country. More workers in the real estate industry reported access to a weekend home than workers in other industries.

Diagram 51. Access to weekend/second home by socioeconomic group 2000-2002. For industries, per cent of employed persons.



5.3.2 Holiday trip during the last year

More than 70 per cent of men and women went on a holiday trip during the preceding year in 2000-02 (*diagram 52*). It is also interesting to see that in all industries but two, i.e. the renting and business services industry and the health services industry, the women travelled more than the men. The largest difference was in the transport industry where only 65 per cent of men went on holiday, compared to 84 per cent of women. The most frequent travellers were employed men and women in the finance industry. A lower number of unemployed persons went on a holiday trip than employed persons.

Diagram 52. Those taking holiday trips by sex 2000-2002. For industries, per cent of employed persons.

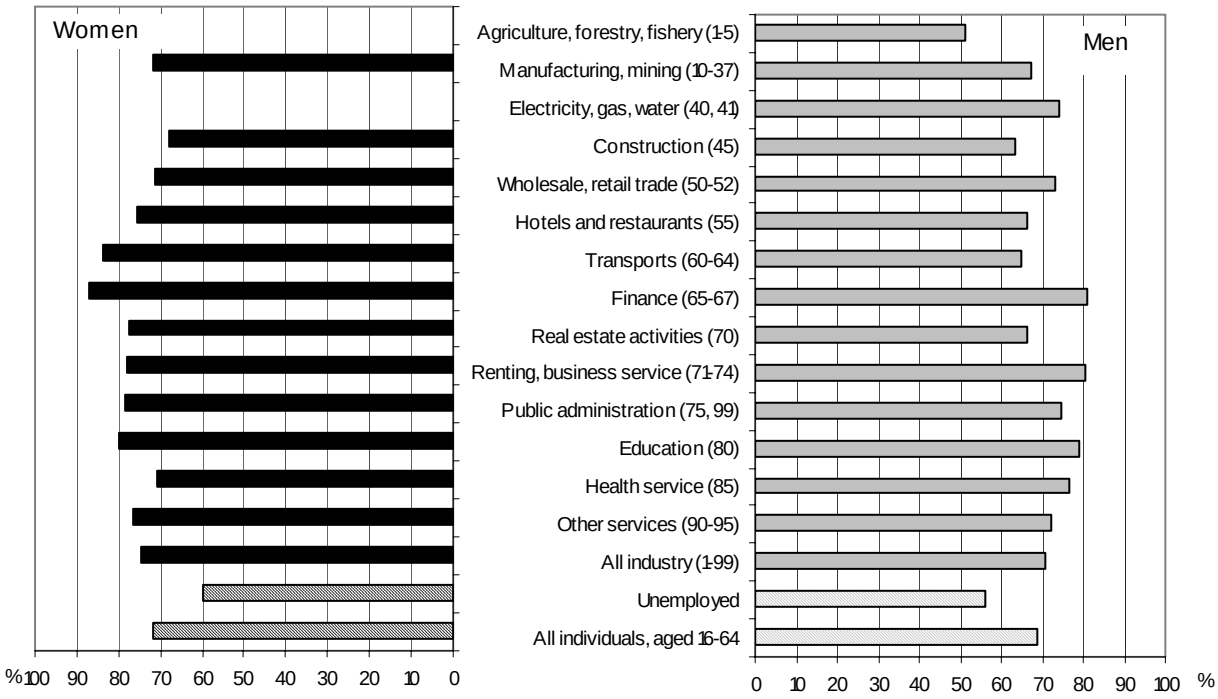


Diagram 53 illustrates trips carried out by employed men and women during 1988 to 2002. Men and women in the agricultural, forestry and fishery industry went on less holiday trips than all the other industries. Trips taken by men in all industries decreased in the middle of the 1990s but have later increased. The holidays taken by women seem to have been more constant over the years. Naturally, this indicator also varies a lot between the years due to the economic situation and the weather.

Diagram 53. Those taking holiday trips between 1988-2002. Per cent of employed persons.

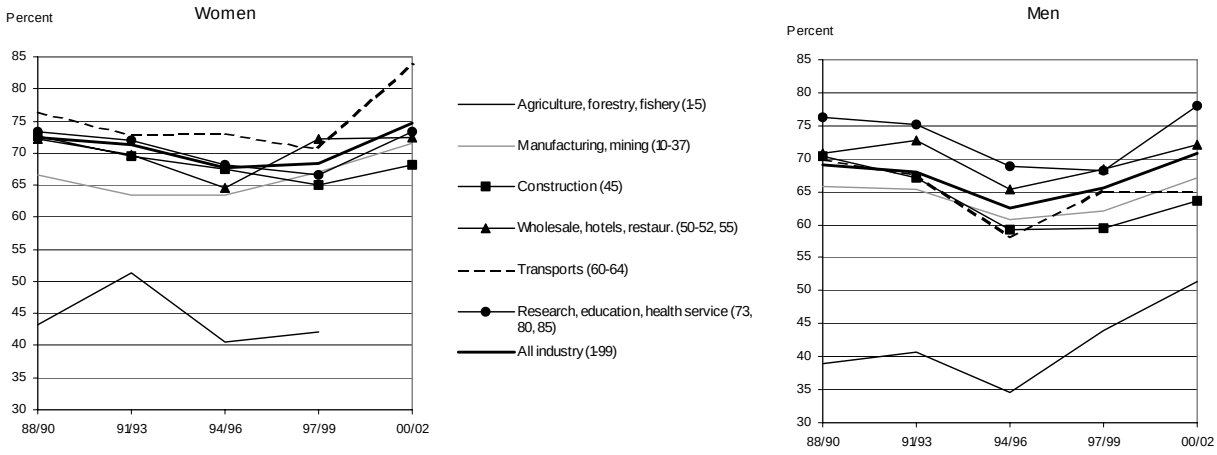
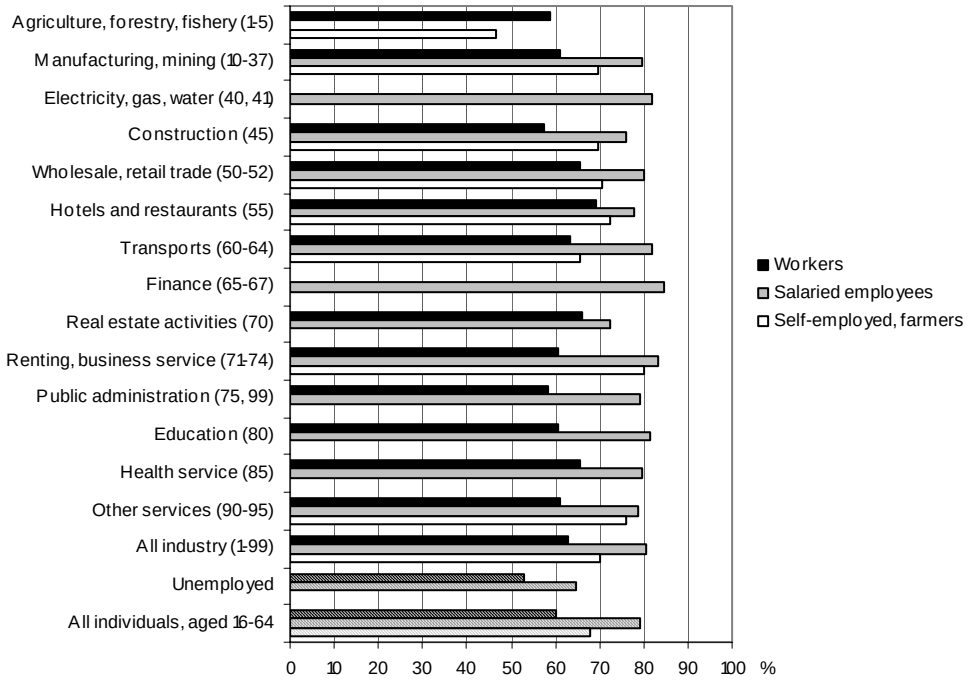


Diagram 54 shows that, in general, more of the salaried employees went on holiday trips in 2000-02 than workers and self-employed persons/farmers. Among workers, those in the hotel and restaurant industry were the most frequent travellers.

Diagram 54. Those taking holiday trips by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



5.3.3 Access to a car in the household

The material standard related to access to a car is very high despite the fact that a car is a large investment for the household, with high running costs. 90 per cent of all employed men and 86 per cent of employed women had access to a car in 2000-02, as seen in *diagram 55*. However, there is a large difference depending on in which industry the employed person was working. The highest access can be found for employed men in the agricultural, forestry and fishing industry, 99 per cent, and for employed women in the manufacturing and mining industry, 90 per cent. Persons living in the country are more dependent on a car than persons living in cities.

Diagram 55. Persons with access to car by sex 2000-2002. For industries, per cent of employed persons.

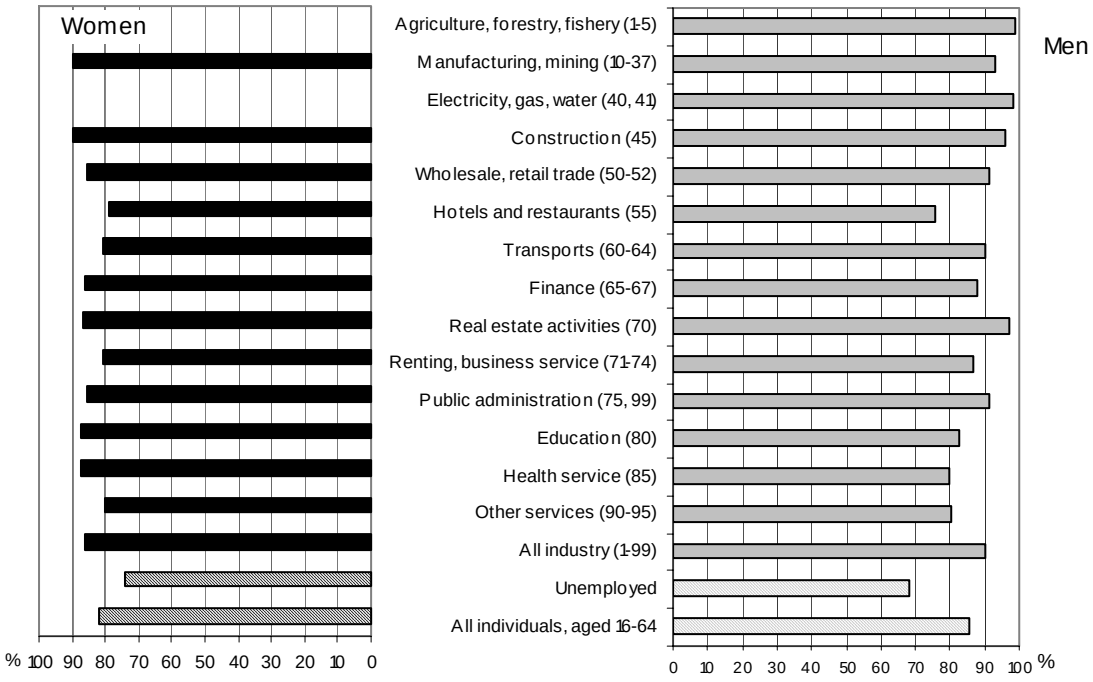
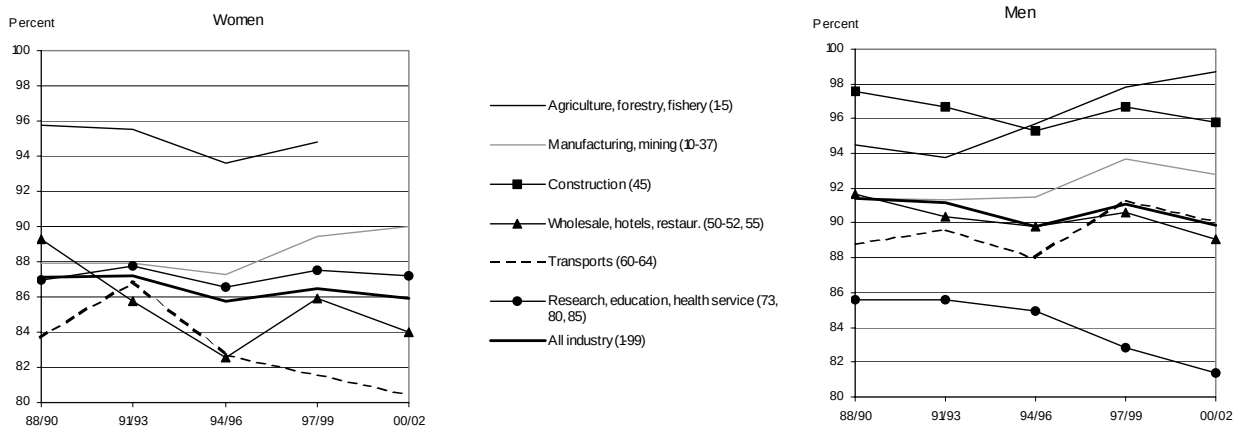


Diagram 56 shows that a slight decrease occurred regarding access to a car for both men and women in the period 1988 to 2002. The most significant change for employed men can be seen in the agricultural, forestry and fishery industry, where the access increased, as well as in the research, education and health services industry, where it decreased by 5 per centage points.

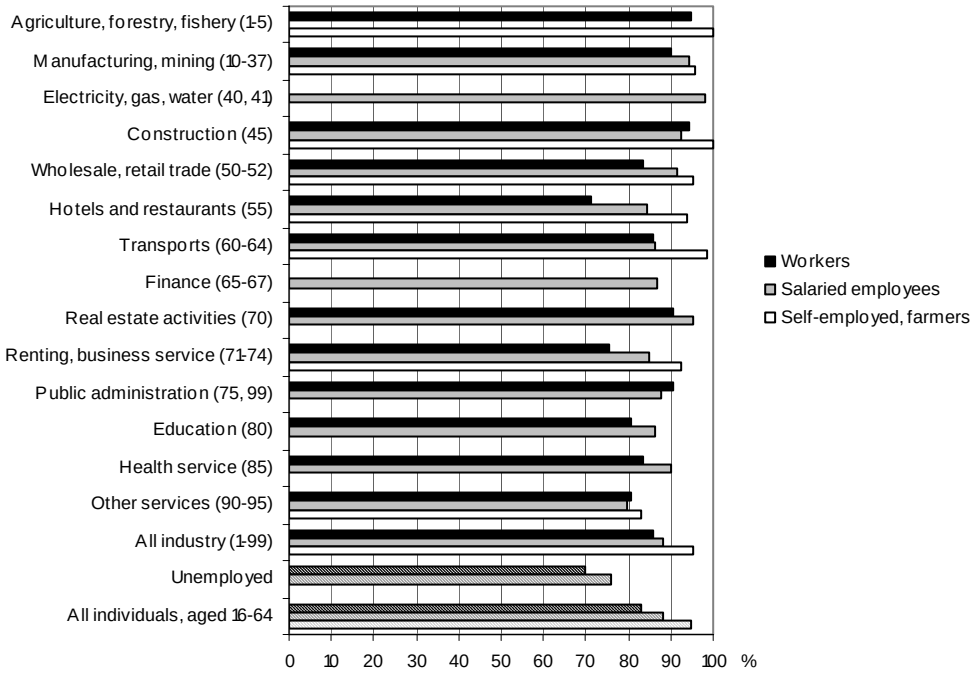
Diagram 56. Persons with access to car between 1988-2002. Per cent of employed persons.



Note: Women in the construction industry have been removed from the diagram because of unreliable data.

The group consisting of self-employed persons and farmers had greater access to a car than salaried employees and workers in general (*diagram 57*). This was especially apparent in two industries, the hotel and restaurant industry and the transport industry. Workers in the hotel and restaurant industry reported the lowest access among the employed, with only 71 per cent having access to a car.

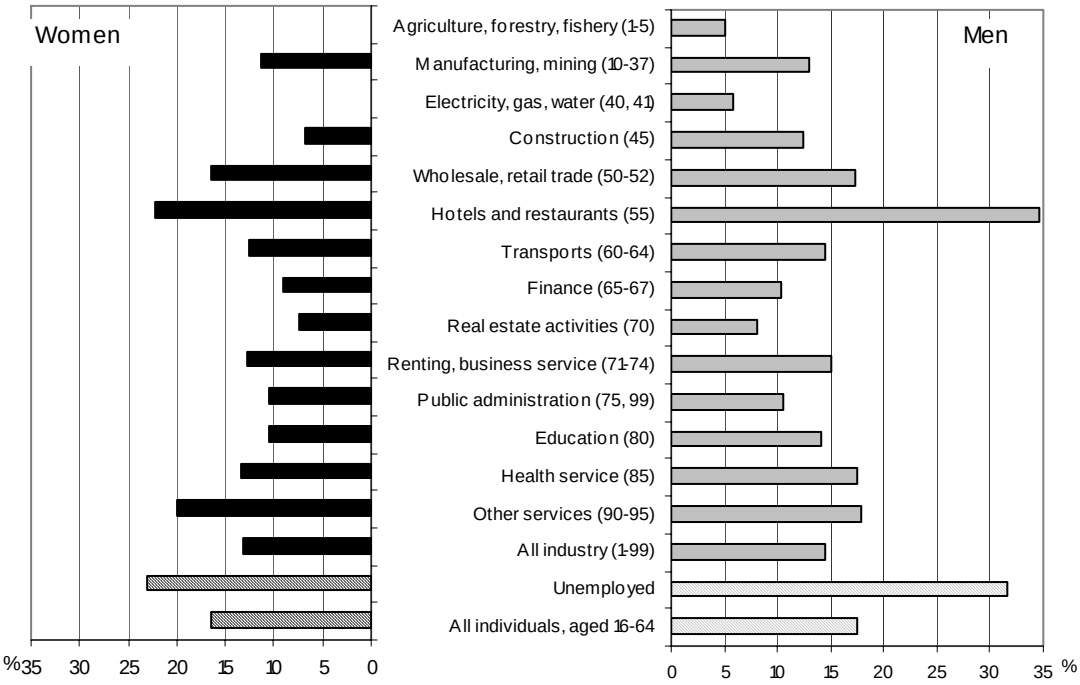
Diagram 57. Persons with access to car by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



5.3.4 Overcrowded living conditions

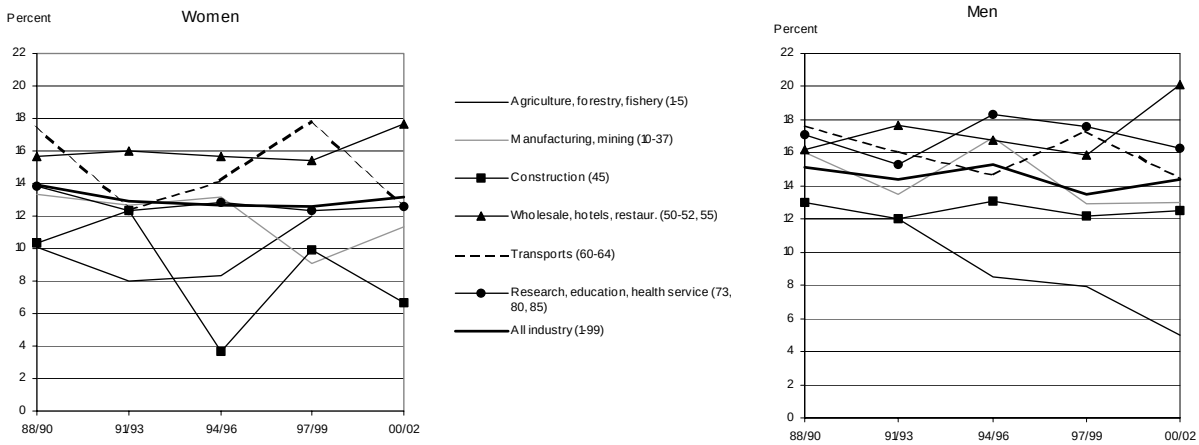
35 per cent of employed men in the hotel and restaurant industry reported that they lived in overcrowded conditions in 2000-02, compared to only 5 per cent in the agricultural, forestry and fishing industry (*diagram 58*). Amongst women, employed women in the hotel and restaurant industry were the most overcrowded, at 22 per cent. Twice as many unemployed men lived in overcrowded conditions than employed men.

Diagram 58. Persons with overcrowded living conditions by sex in 2000-2002. For industries, per cent of employed persons.



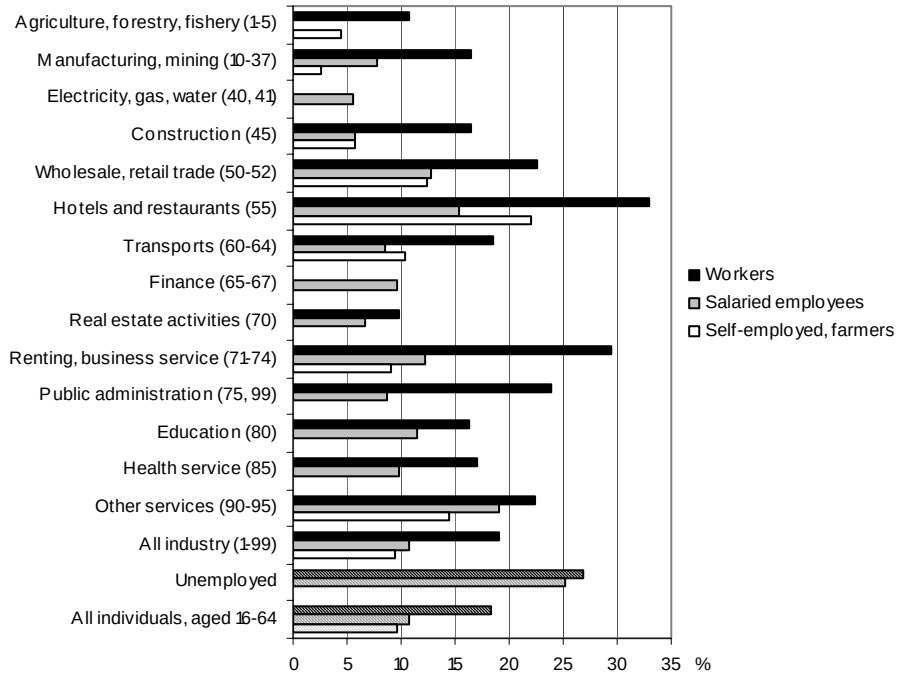
The amount of men and women with overcrowded living conditions fluctuated around 15 per cent for men and 13 per cent for women between 1988 and 2002 (*diagram 59*). However, there are large differences between the industries. Employed women in the construction industry were less overcrowded than women in the other industries. As shown in *diagram 58* above, employed men in the agricultural, forestry and fishing industry had the most space. Here, in *diagram 59*, it is shown that this has been a decreasing trend since 1988.

Diagram 59. Persons with overcrowded living conditions between 1988-2002. Per cent of employed persons.



Workers generally lived in more overcrowded conditions than salaried employees and self-employed persons/farmers, as seen in *diagram 60*. Workers in the hotel and restaurant industry were the most overcrowded in 2000-02.

Diagram 60. Persons with overcrowded living conditions by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



6 Social networks and political resources

6.1 Introduction

This chapter covers some aspects of the individual's contacts within the primary group (family, friends etc.) and his or her relations to larger communities (organizations, interest groups etc.) The concept social networks is wide, since it consists of all the contacts people have in their daily life, contacts with relatives, neighbours, work colleagues and other friends. Not having these kind of social networks has a large impact on an individual's welfare and well-being.
Political resources and participation refers to the individual's ability to promote his or her own interests in relation to public officials and other decision-makers, for example as a member of a political organization or trade union. The possibilities for an individual to deliver his or her opinions and have them noticed are important, and can be achieved by working together with others as well as privately by, for example, voting or contact with the local politicians. The unemployed are also included in this chapter as a special category for comparisons.

Indicators in chapter 6

In addition to the diagrams on social networks and political resources in this chapter, see also industry profiles for indicators on social networks and political resources in *chapter 7.1*.

- **No close friend**
Answered "*no*" to the question: Do you have one or more really close friends that you can contact and discuss anything with?

- **Incidents with violence or physical threat**
Answered "yes" to the question: Have you during the last 12 months been exposed to violent incidents, violence with bodily injury, violence or threat in a dwelling or violence or physical threat in a public area?

- **Voter turnout in national parliamentary elections**
The person has voted in national parliamentary elections.

- **Does not participate in discussions on politics**
Answered "*yes*" to one of the alternatives below: What do you do if you are in a group and the discussion turns to political issues? I do not care to listen when people start talking about politics, or I listen but never take part in discussion about politics

- **Lack the ability to appeal against a public authority**
Answered "*no*" to the question: Are you capable of writing a letter and appealing against a decision taken by an authority?

- **Member of a trade union**
Answered "*yes*" to the question: Are you a member of a trade union?

- **Member of a political party**
Answered "*yes*" to the question: Are you a member of a political party?

6.2 Social networks

6.2.1 No close friend

Twice as many men than women had no close friend to confide in during 2000-02, almost 20 per cent of men compared to 10 per cent of women. There were large differences between employed persons in different industries, as seen in *diagram 61*. Men in the agricultural, forestry and fishing industry and women in the real estate industry were the most alone, with 29 and 23 per cent respectively having no close friend. However, there were only between 40 and 50 observations for the women in the real estate industry, so the result is unreliable. 25 per cent of unemployed men had no close friend, compared to 13 per cent of unemployed women.

Diagram 61. Persons with no close friend by sex in 2000-2002. For industries, per cent of employed persons.

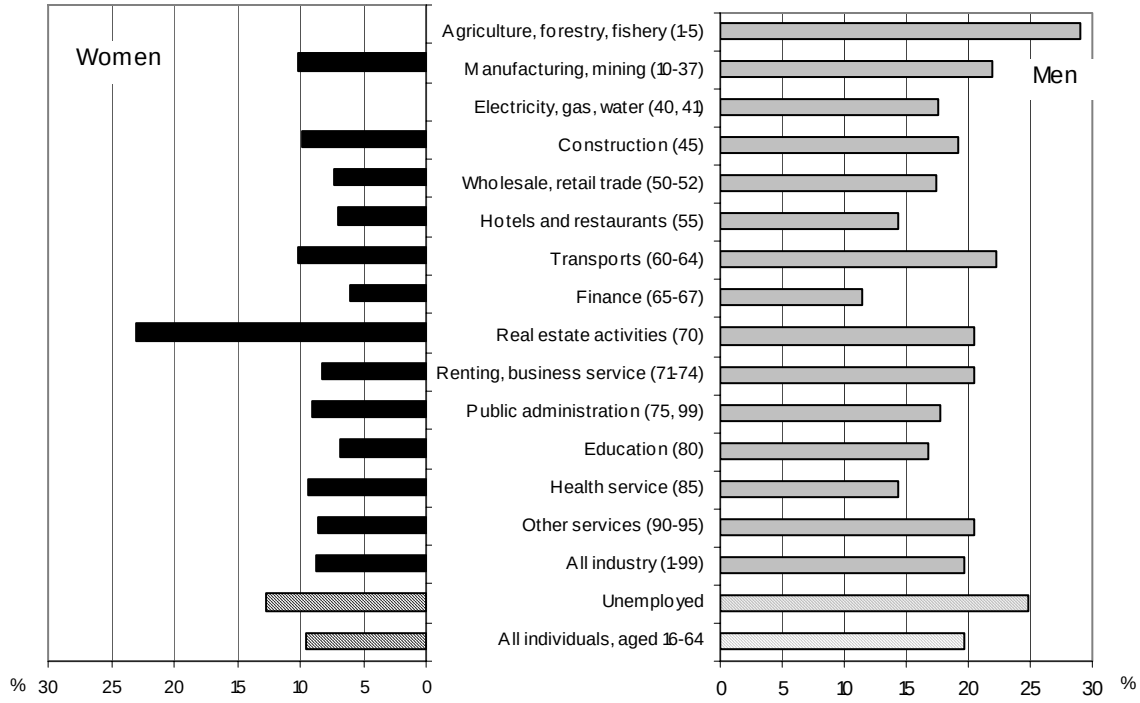
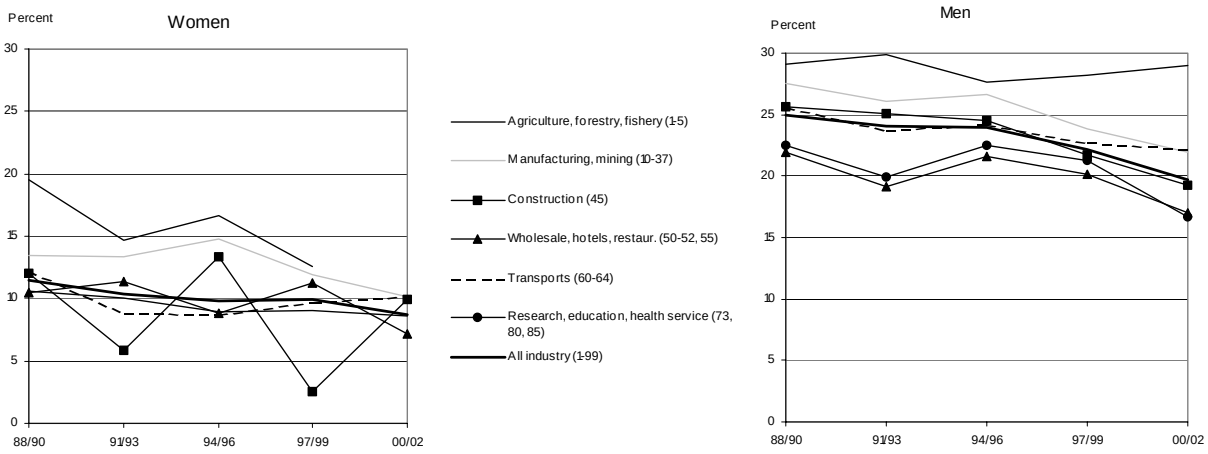


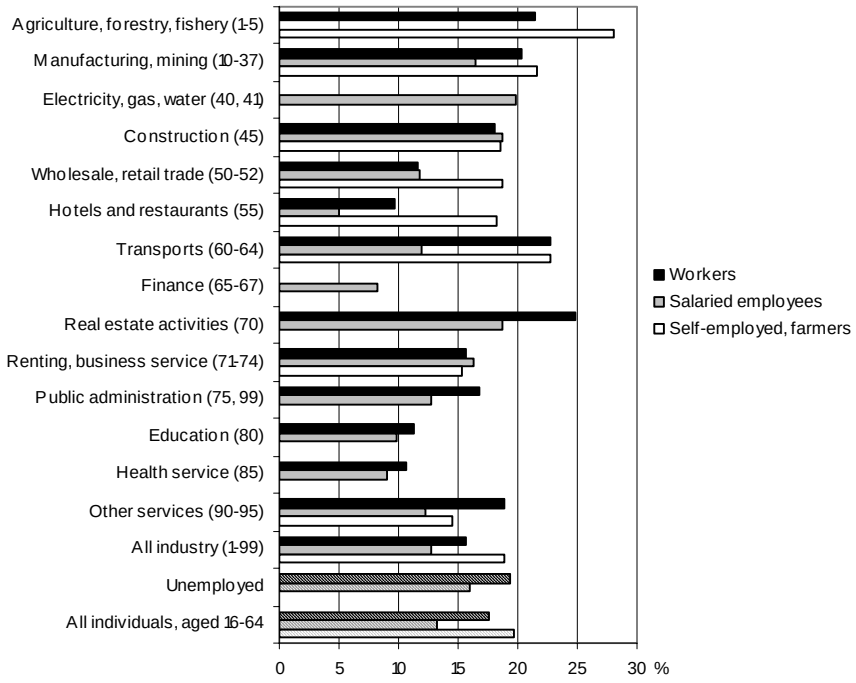
Diagram 62 illustrates a positive trend, both men and women without a close friend were fewer in 2000-02 than in the period from 1988 to 2000. One exception was employed men in the agricultural, forestry and fishing industry, where the number of men without a close friend has been constant at around 28 per cent.

Diagram 62. Persons with no close friend between 1988-2002. Per cent of employed persons.



Salaried employees were less alone than workers and self-employed persons/farmers in 2000-02 (*diagram 63*). Only in the construction industry and in the renting and business services industry were salaried employees more often without a close friend than the other two groups. The distribution between the groups is similar for all individuals as well as for the unemployed.

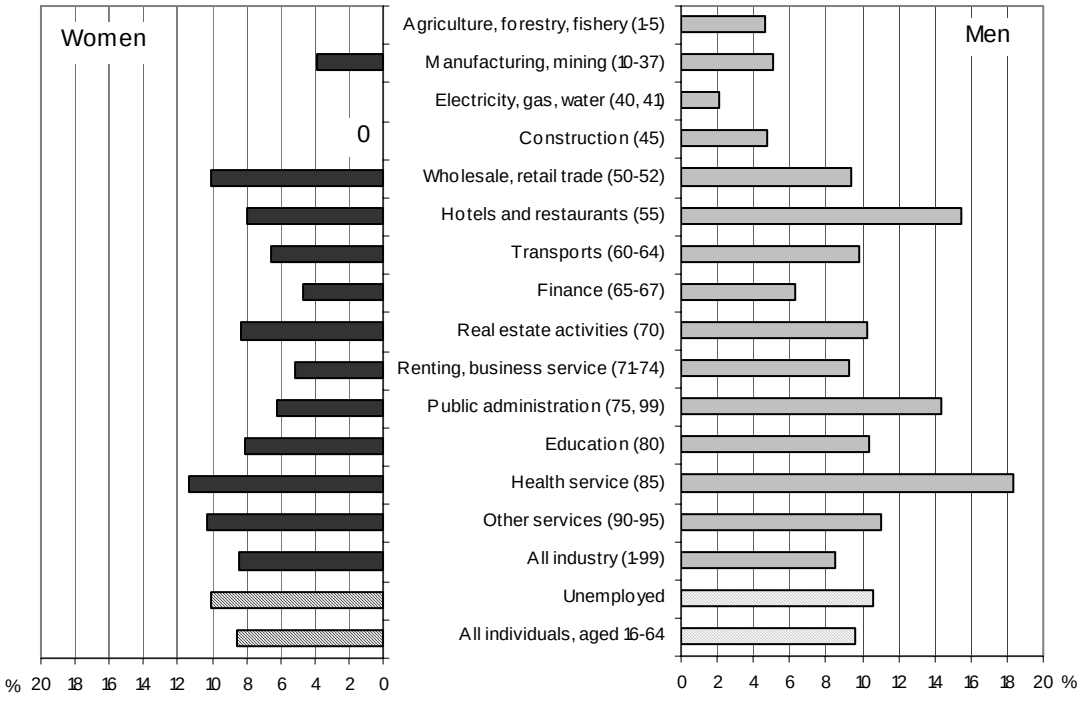
Diagram 63. Persons with no close friend by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



6.2.2 Incidents with violence or physical threat

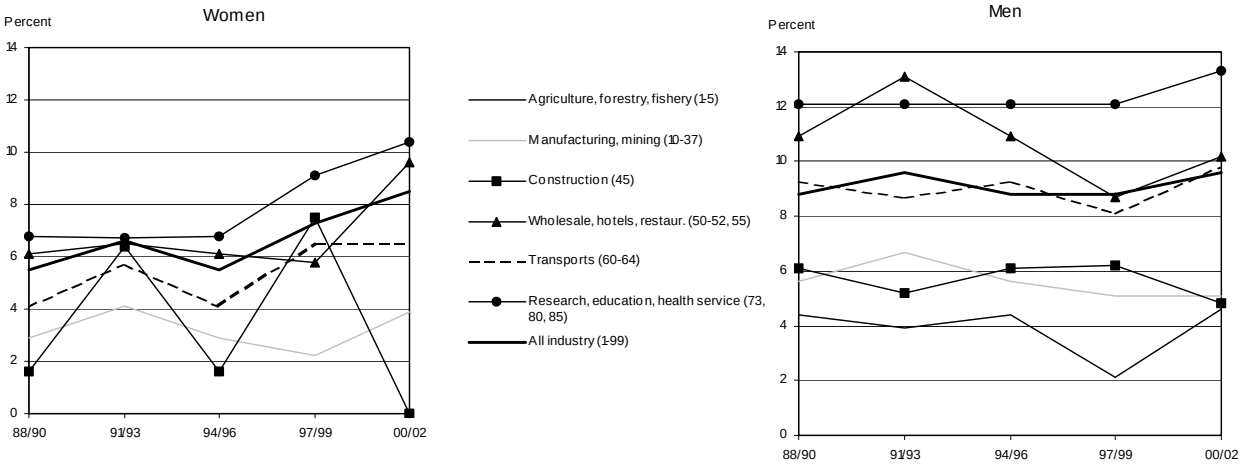
Approximately 9 per cent of all employed men and women had been exposed to incidents with violence or physical threat in 2000-02 (*diagram 64*). Men in the health services industry and in the hotel and restaurant industry were exposed to violence or threats to a higher degree than those employed in the other industries.

Diagram 64. Persons who had experienced an incident with violence or physical threat by sex in 2000-2002. For industries, per cent of employed persons.



There was an increase in incidents with violence or physical threat among women during 1988-2002, from 6 to 9 per cent, while the figures have been stable among men (*diagram 65*). Consequently, the gap between men and women has decreased.

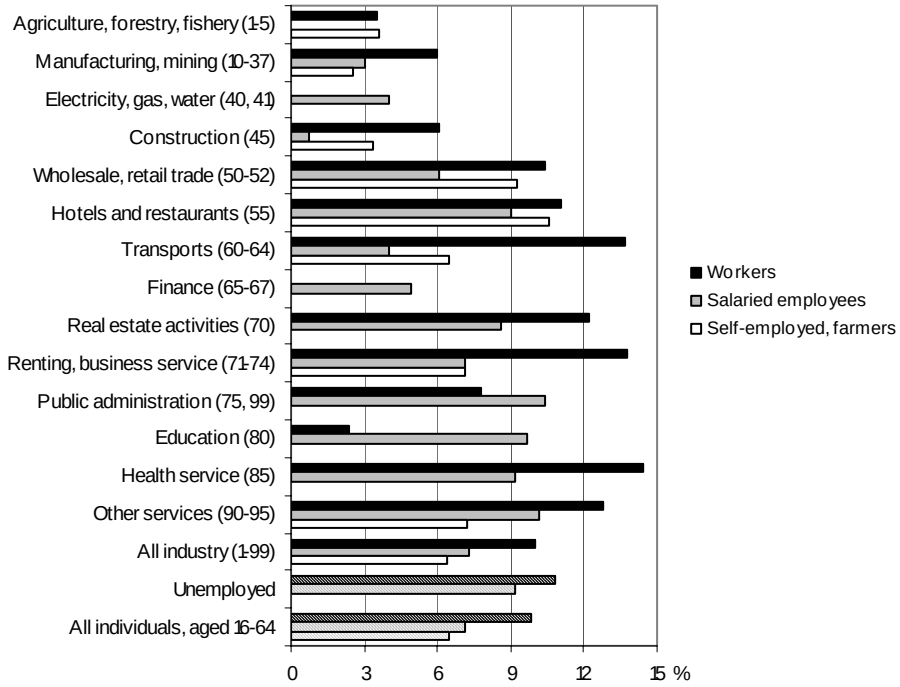
Diagram 65. Persons who had experienced an incident with violence or physical threat between 1988-2002. Per cent of employed persons.



Note: Women in the agricultural industry have been removed from the diagram because of unreliable data.

Diagram 66 shows that self-employed persons/farmers and salaried employees were exposed to incidents with violence or physical threat to a lesser degree than workers. The difference was most marked in the construction and transport industries.

Diagram 66. Persons who had experienced an incident with violence or physical threat by socio-economic group in 2000-2002. For industries, per cent of employed persons.

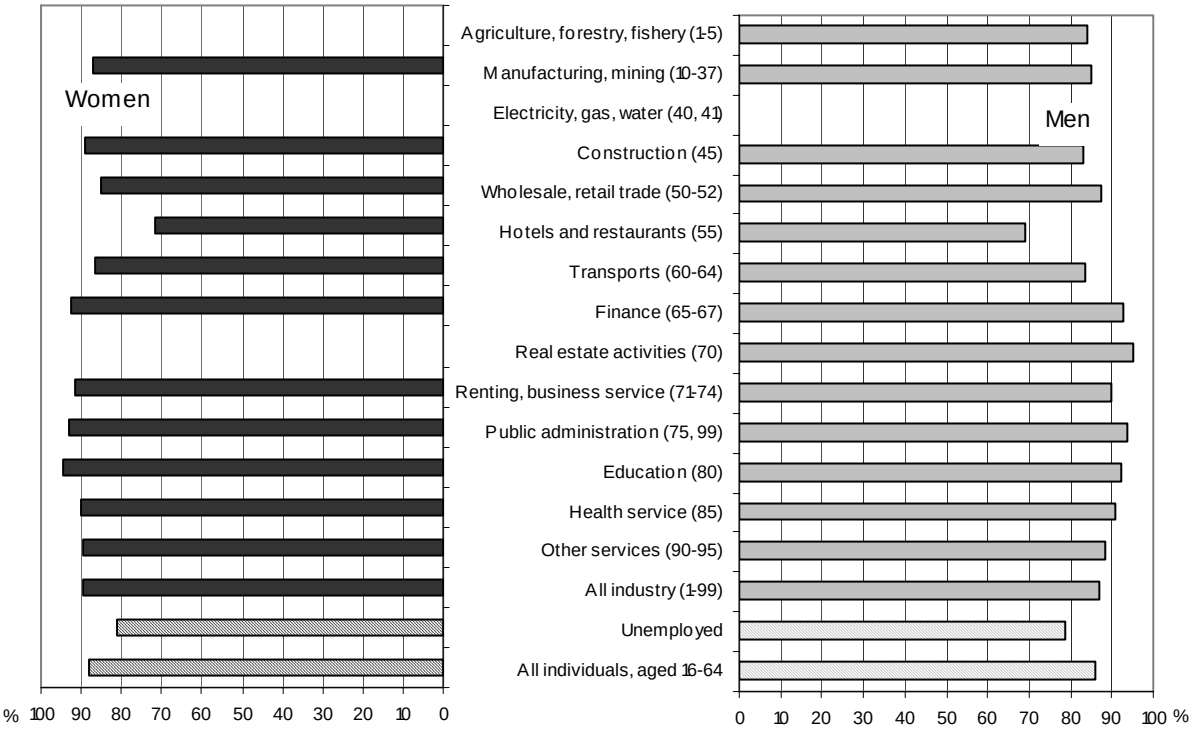


6.3 Political resources

6.3.1 Voter turnout in national parliamentary elections

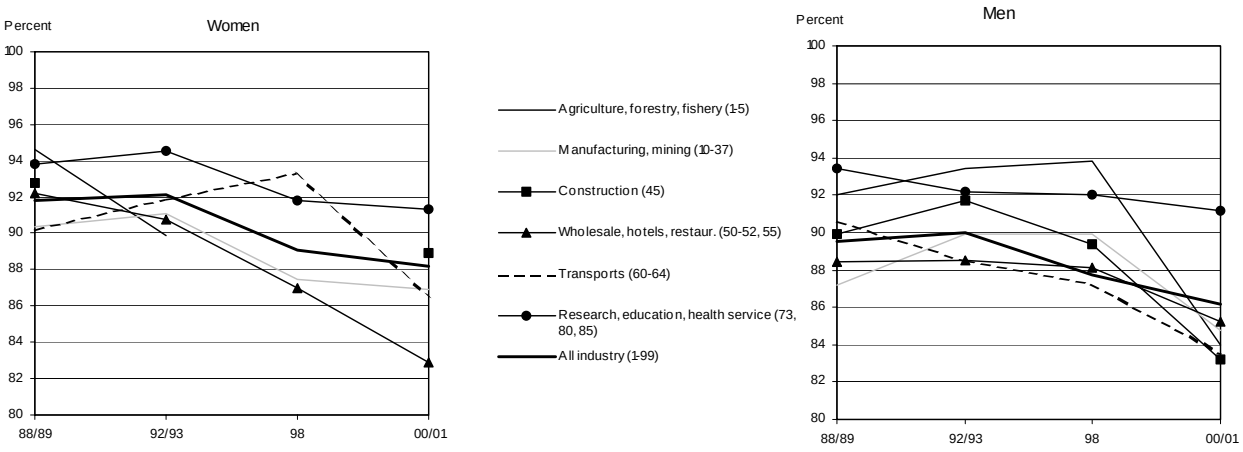
The result for most of the industries presented in *diagram 67* is quite close to the average for all industries regarding voter turnout in the national parliamentary elections. The exception was the hotel and restaurant industry, in which about 70 per cent of employed persons voted, which was even lower than the voter turnout among the unemployed.

Diagram 67. Voter turnout in national parliamentary elections by sex in 2000/2001. For industries, per cent of employed persons.



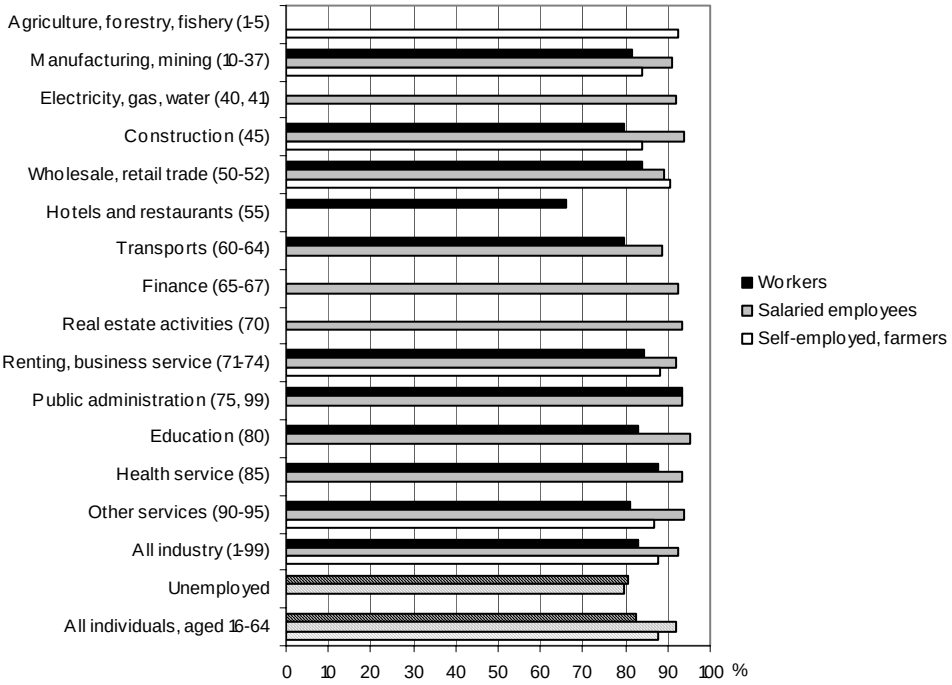
The voter turnout decreased among men and women during the period 1988-2001, as is shown in *diagram 68*. The greatest decrease occurred among women in the wholesale, hotel and restaurant industry, with a decrease of 10 per centage points.

Diagram 68. Voter turnout in national parliamentary elections between 1988-01. Per cent of employed persons.



Salaried employees voted more than workers and self-employed persons/farmers (*diagram 69*). As in *diagram 68* above, the hotel and restaurant industry stands out from the others, with only 66 per cent of workers in this industry voting.

Diagram 69. Voter turnout in national parliamentary elections by socio-economic group 2000-2001. For industries, per cent of employed persons.



6.3.2 Does not participate in discussions on politics

Approximately 8 per cent of employed men and women did not participate in discussions on politics in 2000-02, as demonstrated in *diagram 70*. Women in the manufacturing and mining industry as well as men in the hotel and restaurant industry participated the least, at 13 per cent. Men in the finance industry participated the most in discussions on politics, since only 2 per cent were not participating. Both unemployed persons and all individuals had a higher per centage than employed persons in all industries. See also *diagram 87* in *chapter 7.2.3*, which shows participation in discussions on politics by age.

Diagram 70. Does not participate in discussion on politics by sex 2000-2002. For industries, per cent of employed persons.

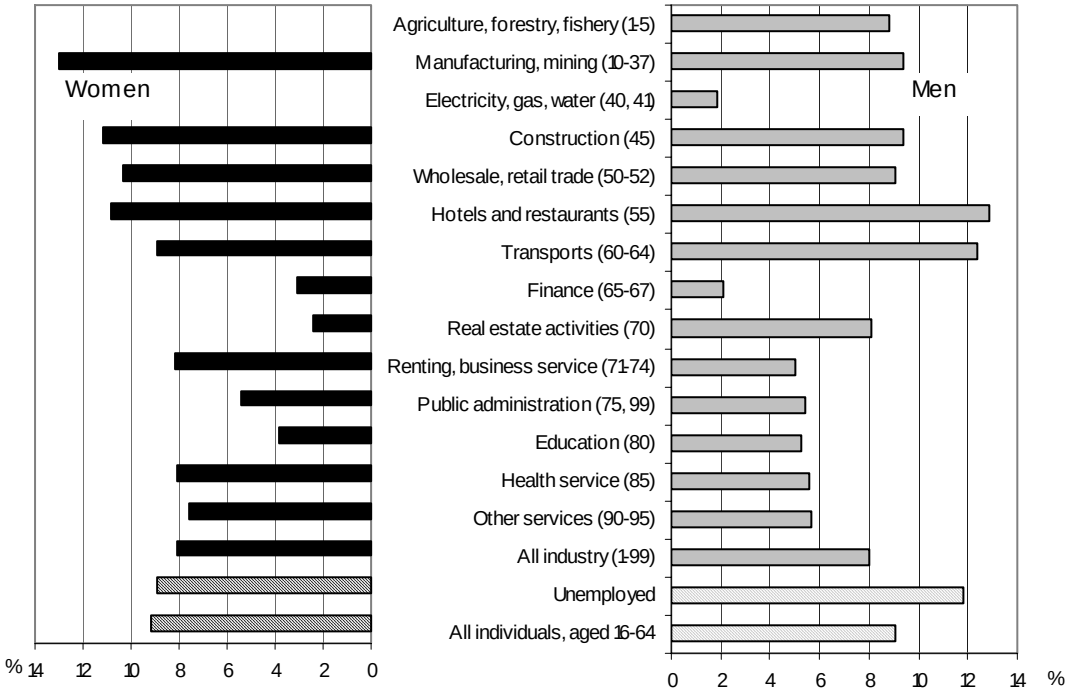
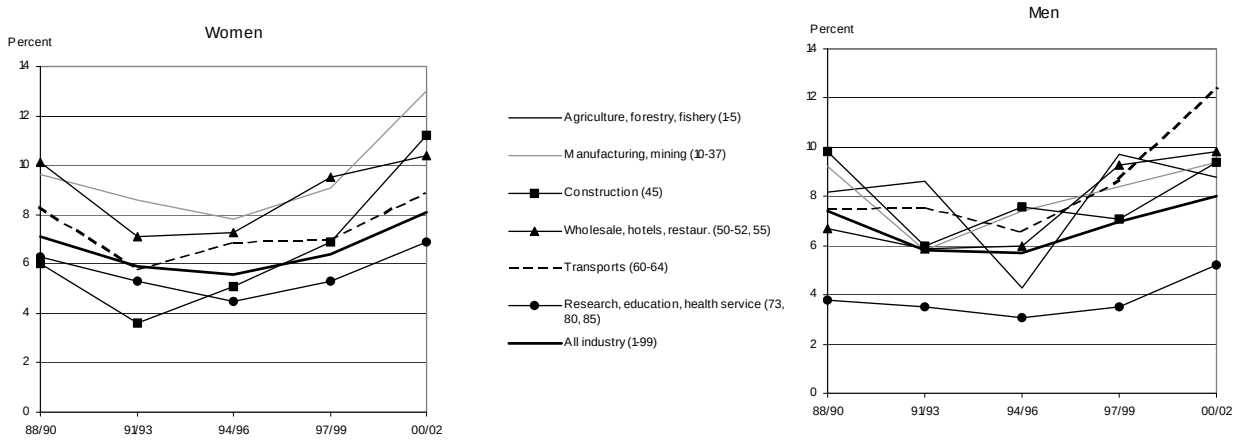


Diagram 71 presents the development between 1988 and 2002. The interest in discussing political issues has decreased in all industries. However, there are large differences between the different industries.

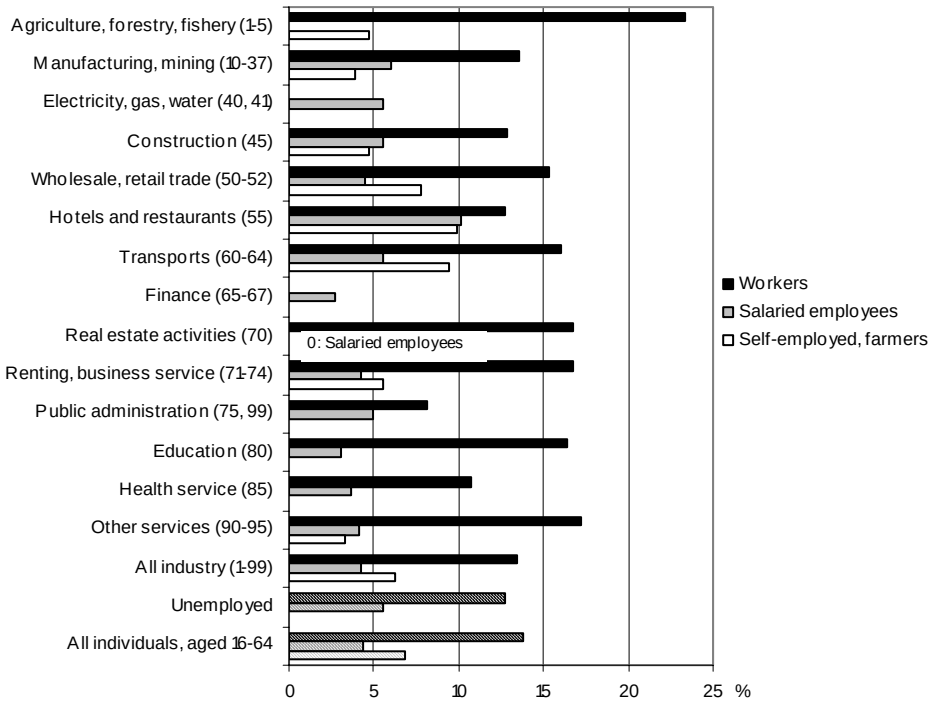
Diagram 71. Does not participate in discussion on politics between 1988-2002. Per cent of employed persons.



Note: Women in the agricultural industry have been removed from the diagram because of unreliable data.

Workers participated to a lesser degree in political discussions than salaried employees and self-employed persons/farmers in 2000-02, as shown in *diagram 72*. Around 16 per cent of workers in many of the industries did not participate in political discussions. 13 per cent of unemployed workers did not participate, compared to only 6 per cent of unemployed salaried employees.

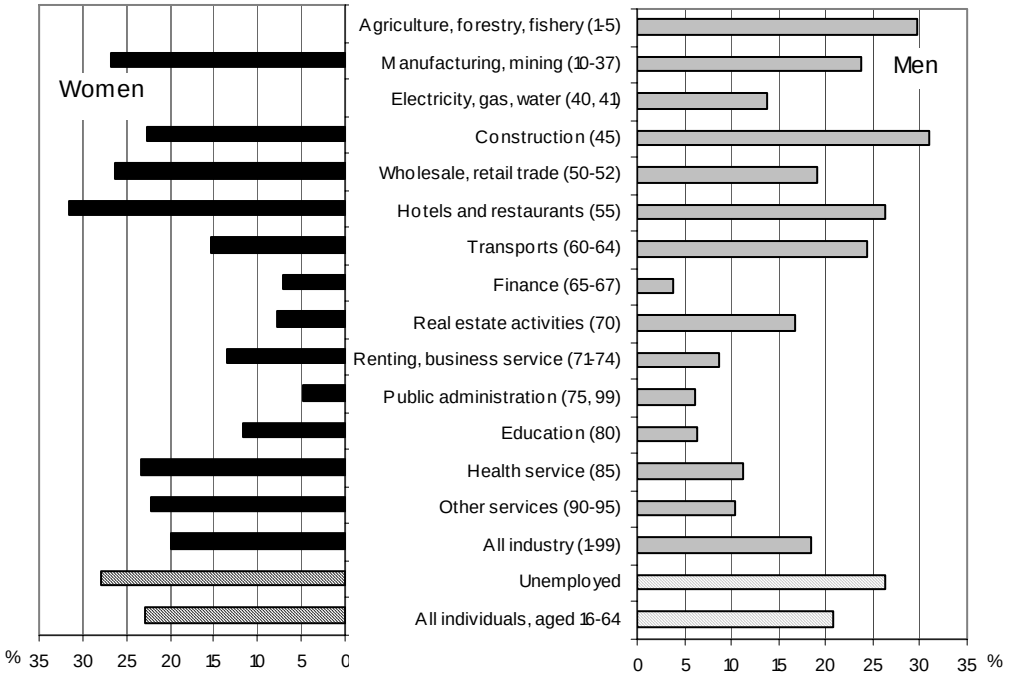
Diagram 72. Does not participate in discussion on politics by socio-economic group in 2000-2002. For industries, per cent of employed persons.



6.3.3 Lack the ability to appeal against a public authority

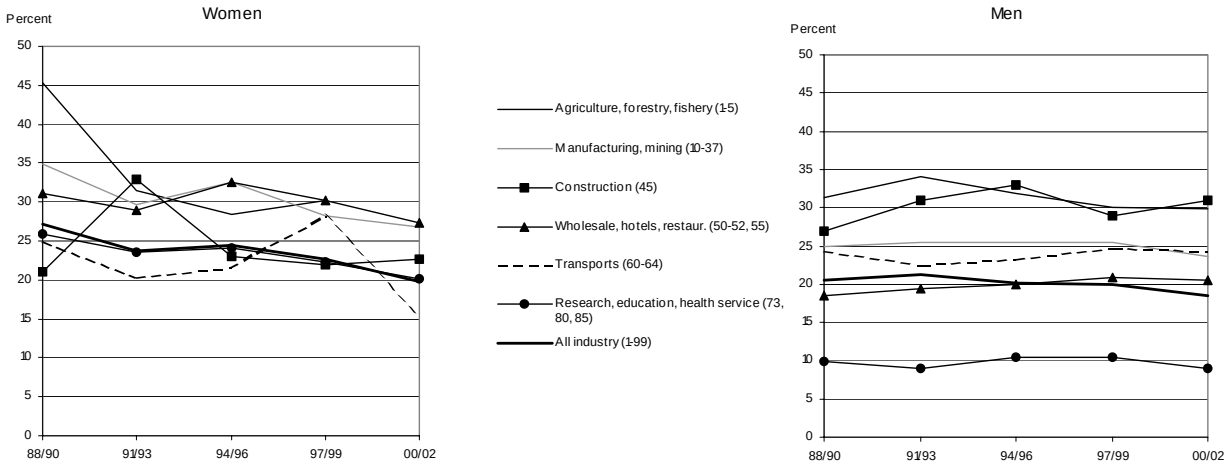
The measure of an individual´s personal confidence in his or her independent ability to approach an official is presented in *diagram 73*. In general, more women than men felt that they lacked the ability to appeal against a public authority in 2000-02. Only 4 per cent of men employed in the finance industry did not have the ability to appeal, which can be compared to 32 per cent of women working in the hotel and restaurant industry. Unemployed persons attained higher per centages than the average employed person in all industries and all individuals in age 16 to 64.

Diagram 73. Lack the ability to appeal against a public authority by sex in 2000-2002. For industries, per cent of employed persons.



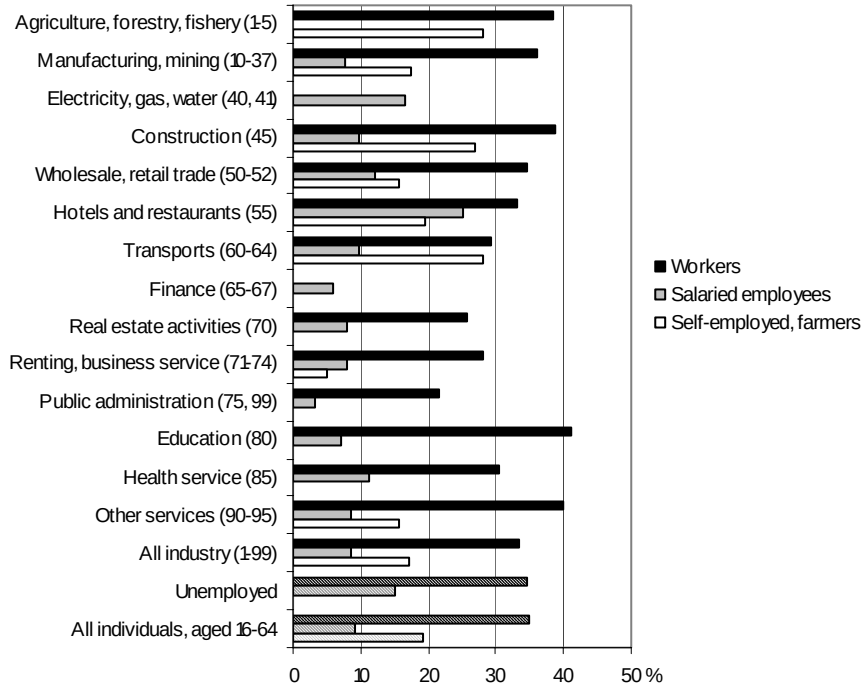
The lack of ability to approach and appeal to an official has decreased in the period 1988 to 2002. *Diagram 74* shows that less employed men than women lack the ability to appeal against public authorities in 2000-02. It can be seen here that women's lack of ability has decreased more than men's during the period.

Diagram 74. Lack the ability to appeal against a public authority between 1988-2002. Per cent of employed.



For this indicator again, workers showed the most negative results for 2000-02 (*diagram 75*). 34 per cent of employed workers reported a lack of ability to appeal a decision, compared to 9 per cent of salaried employees and only 17 per cent of self-employed persons/farmers. More of the unemployed salaried employees lacked the ability to appeal than the employed, 15 per cent compared to 9.

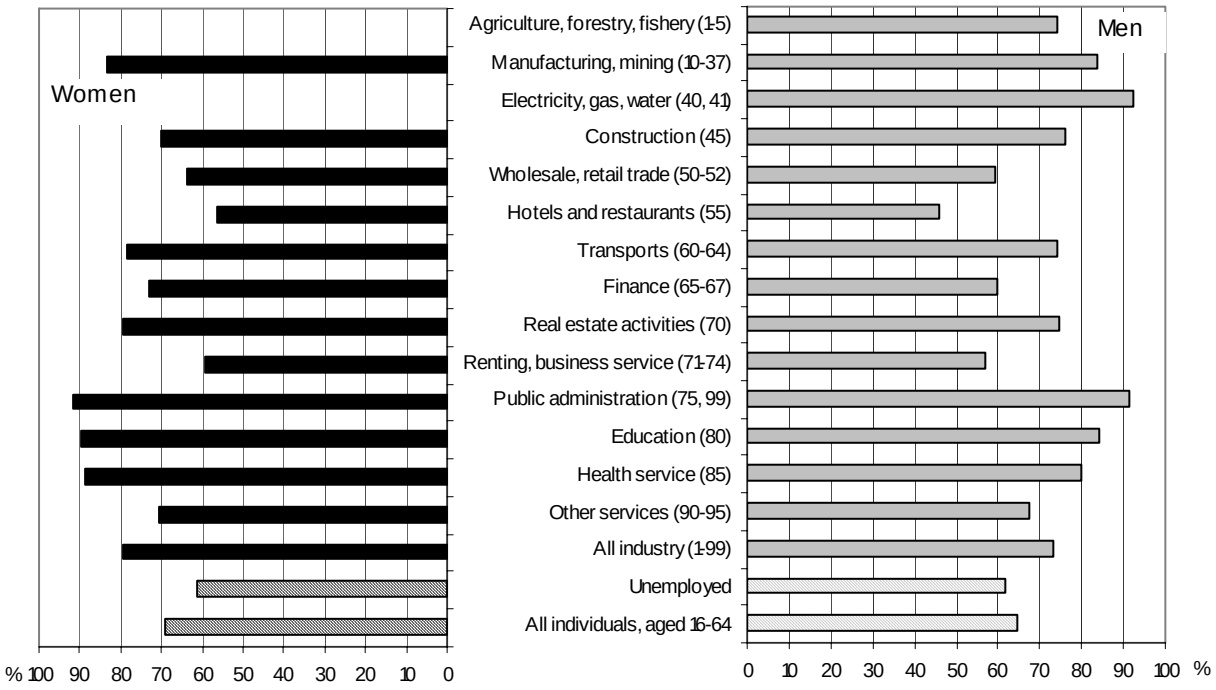
Diagram 75. Lack the ability to appeal against a public authority by socio-economic group 2000-2002. For industries, per cent of employed persons.



6.3.4 Members of a trade union

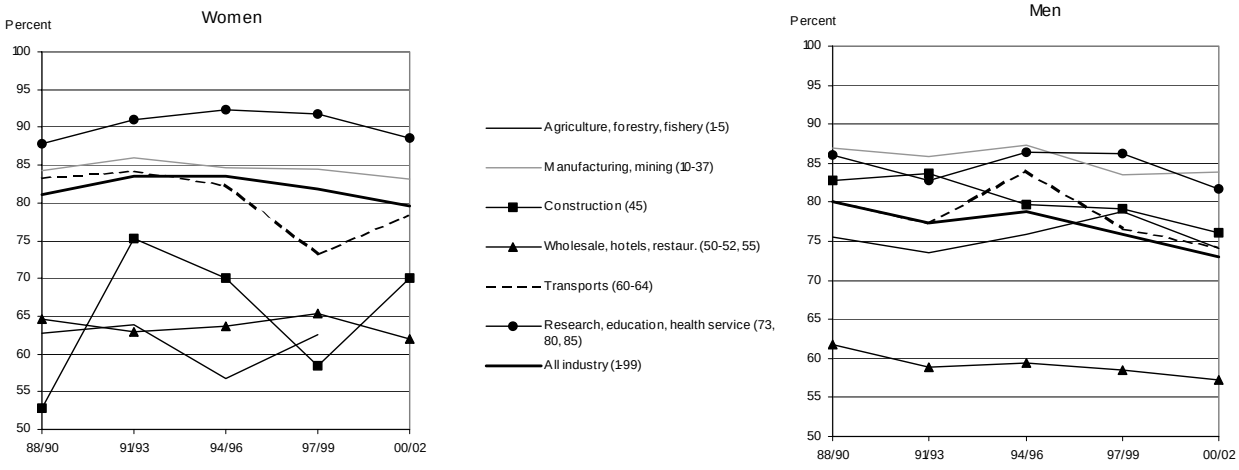
As seen in *diagram 76*, more employed women than men were members of a trade union in 2000-02, 80 per cent of women compared to only 73 per cent of men. Only around 46 per cent of men and 56 per cent of women in the hotel and restaurant industry were members, compared to over 80 per cent in many other industries.

Diagram 76. Members of a trade union by sex 2000-2002. For industries, per cent of employed persons.



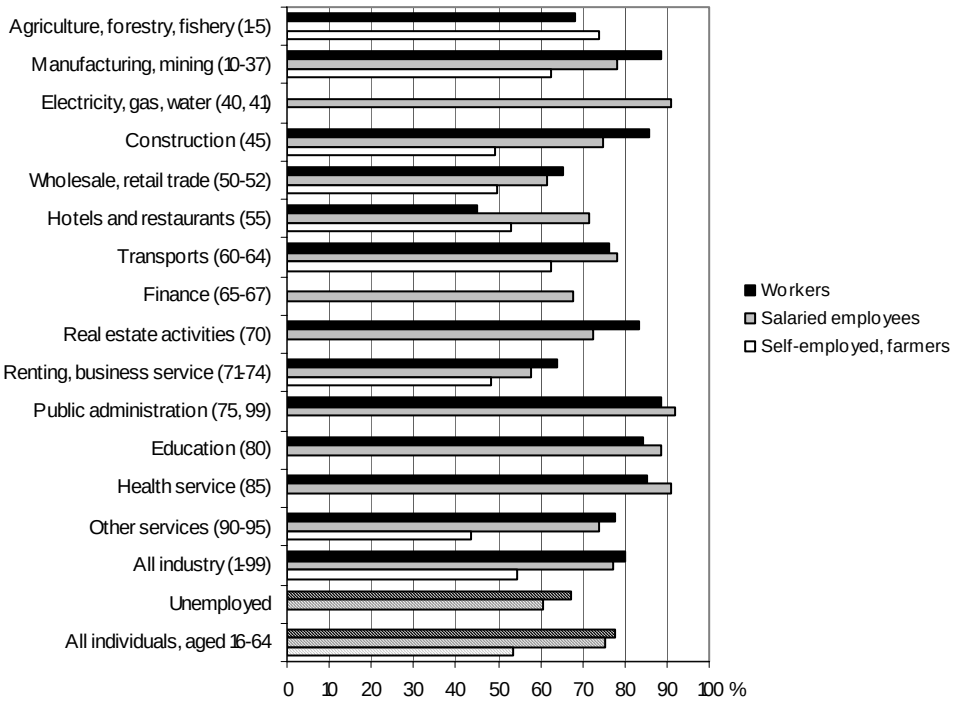
There was a general decline in trade union membership during 1988-2002, for both employed women and men (*diagram 77*). However, the development has varied between the sexes and the industries. In the construction industry, for example, women have shown a positive trend and men a negative trend.

Diagram 77. Members of a trade union between 1988-2002. Per cent of employed persons.



Overall, there did not seem to be much difference in trade union membership between workers and salaried employees in 2000-02 (*diagram 78)*. Fewer self-employed persons and farmers than workers and salaried employees were members. However, this result varied more when looking at specific industries. For example, more salaried employees in the hotel and restaurant industry were members than both workers and self-employed persons/farmers. Unemployed persons were generally less likely to be members than employed persons.

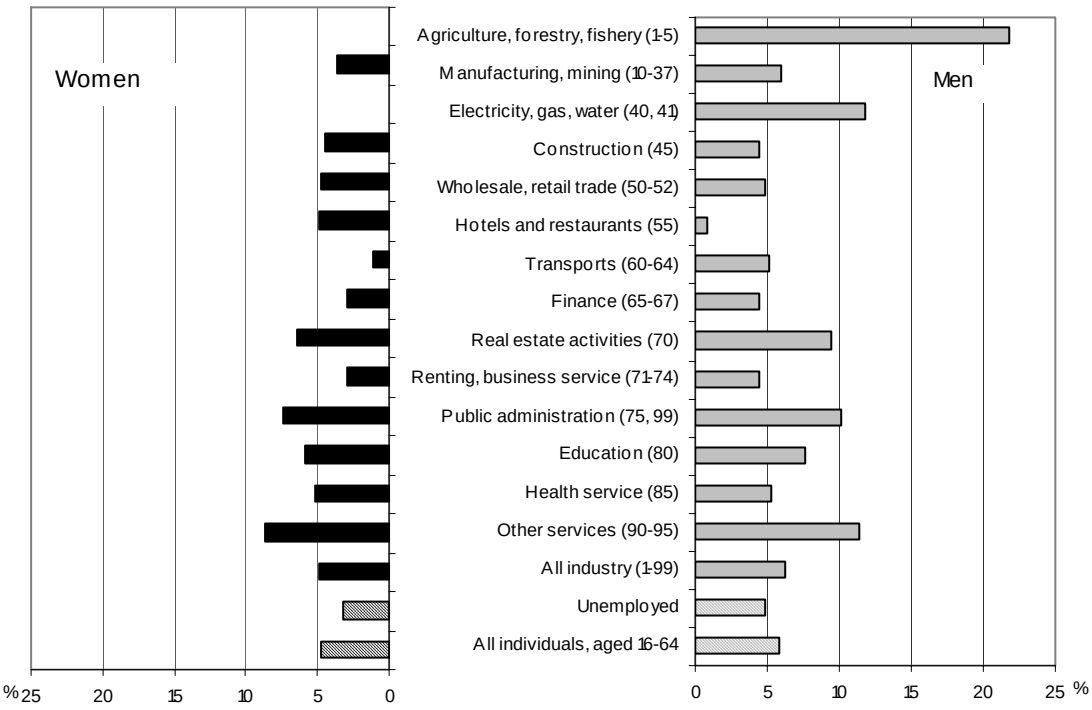
Diagram 78. Members of a trade union by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



6.3.5 Members of a political party

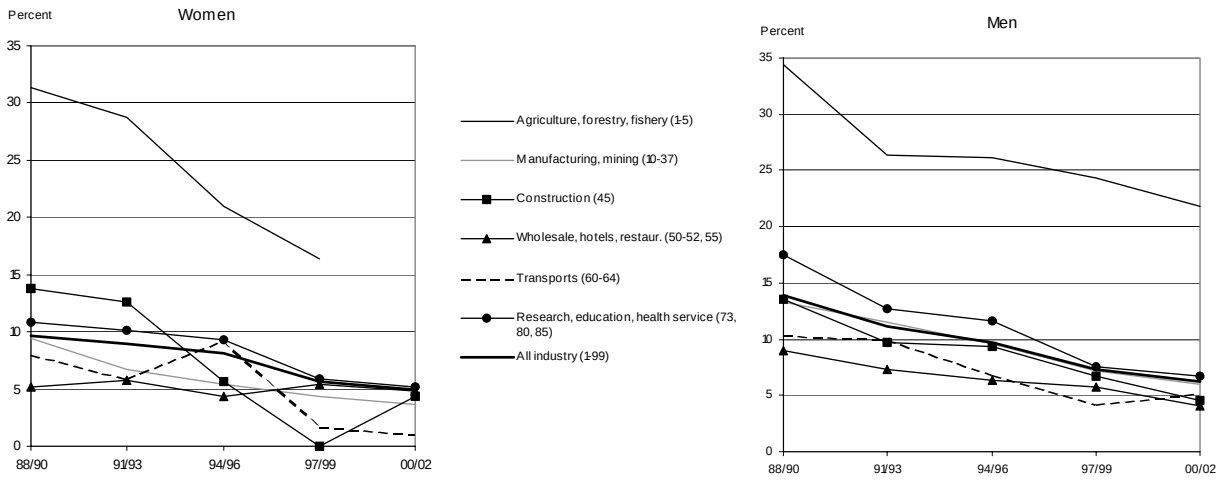
Generally, employed men were more often members of a political party than women in 2000-02, with 6 per centage points compared to 5 (*diagram 79*). However, there were considerable differences between the industries. In the transport industry, for example, 5 per cent of men were members compared to only 1 per cent of women. On the other hand, employed persons in the hotel and restaurant industry showed the opposite result, 1 per cent of men compared to 5 of women were members. Fewer unemployed men and women were members than the average employed of all industries.

Diagram 79. Members of a political party by sex in 2000-2002. For industries, per cent of employed persons.



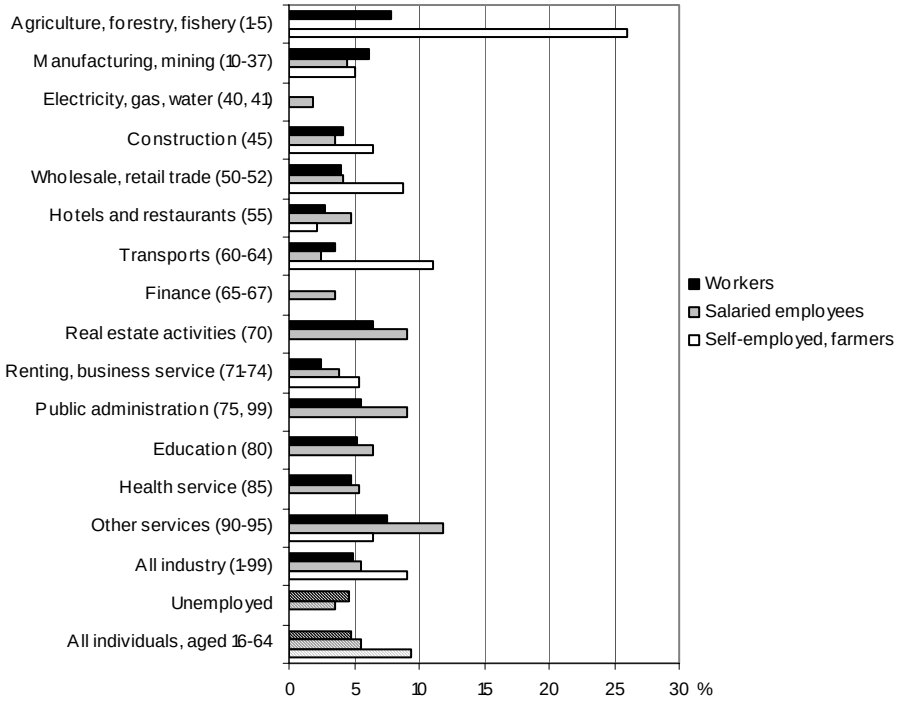
There was a sharp decline in employed persons with political party memberships between 1988 and 2002 (*diagram 80*). In *diagram 79* above, it was illustrated that men in the agricultural, forestry and fishing industry were members more often than the average for employed persons. *Diagram 80* below shows that the members in this industry used to be even more numerous during the 1990s.

Diagram 80. Members of a political party between 1988-2002. Per cent of employed persons.



Self-employed persons and farmers stick out as a group regarding political party membership in 2000-02 (*diagram 81*). 9 per cent were members, compared to only around 5 of employed workers and salaried employees. All individuals showed much the same result. A look at the separate industries shows more notable differences. 26 per cent of self-employed persons and farmers in the agricultural, forestry and fishing industry were members compared to only 8 per cent of workers. Only in the hotel and restaurant industry and in the other services industry were more workers and salaried employees members than self-employed persons and farmers.

Diagram 81. Members of a political party by socioeconomic group in 2000-2002. For industries, per cent of employed persons.



7 Environmental accounts and other analyses of social data

7.1 Social statistics in environmental accounts

One of the main purposes with environmental accounts is to link the environmental field with the economic field to see how they interact with each other. This is achieved, among other things, by accounting on emissions by industry, for example, to see how the economic sector affects the environment. These interactions are often shown in so-called industry profiles and decoupling diagrams, which are both presented in this chapter.

Industry profiles show how much each industry contributes to the total for all industries for different variables and decoupling diagrams compare an economic variable (such as value added) with an environmental variable (such as CO_2 emissions) over time as an index.

These types of diagrams can also be used for social statistics, making it possible to connect the social field with the environment and economics. Social data from ULF have been included in the industry profiles and decoupling diagrams below, to show how the three fields can be linked together.

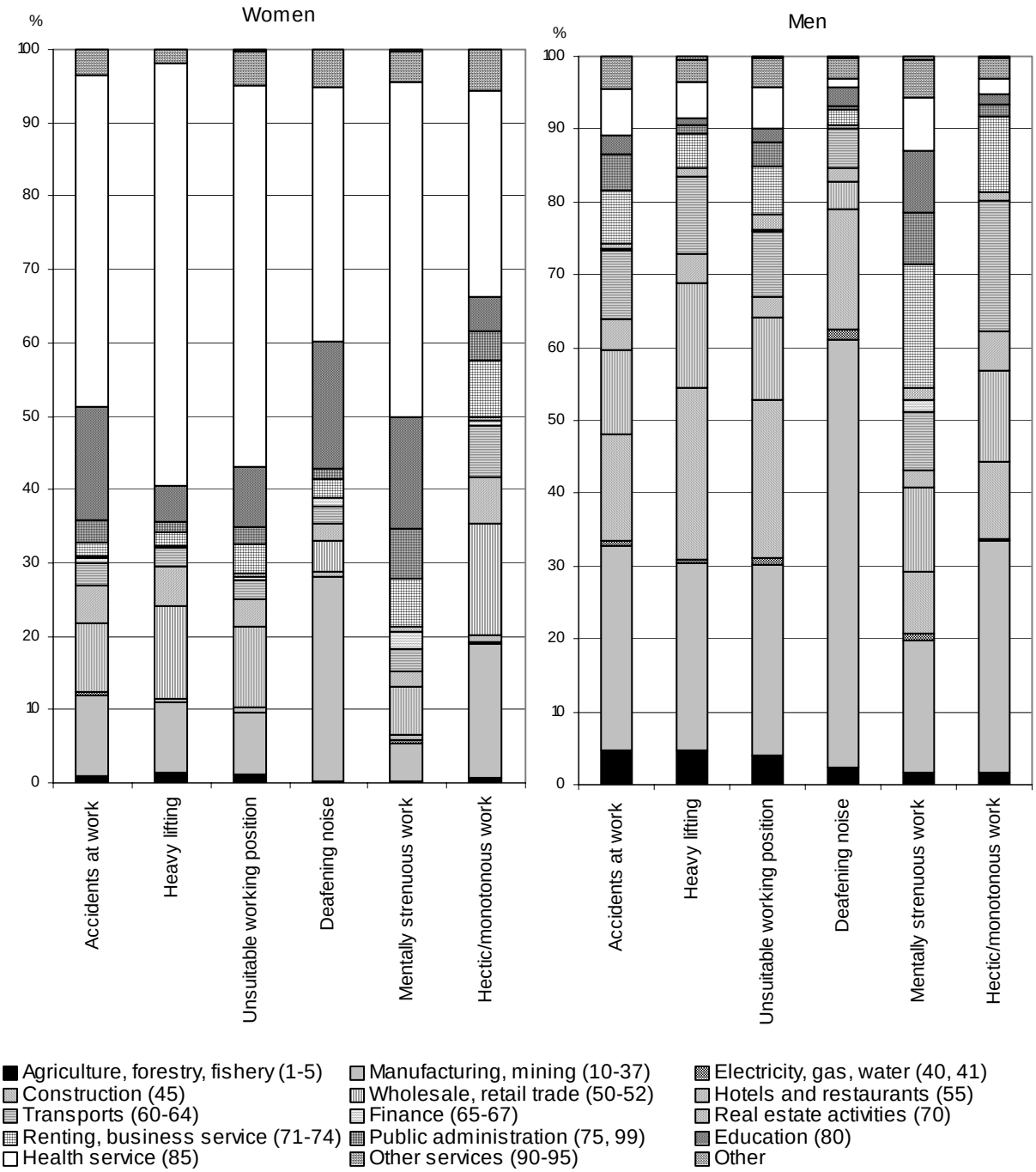
7.1.1 Industry profiles

The diagrams so far in the report have shown the per centage of employed persons within each industry for each indicator, e.g. the per centage of employed women performing heavy lifting in the manufacturing industry. Another way to present the data is to show how much, in per cent, each industry contributes to the total for all industries, e.g. employed women performing heavy lifting in the manufacturing industry make up X per cent of all employed women that perform heavy lifting. This way of presenting data is common in the environmental field, to show industries emissions, for example.

However, it is important to mention that, in general, the more employed people there are, the higher the value for the industry is.

Diagram 82 (next page) shows the structure of the labour market on the basis of sex. Industries like education and health services have received high values for employed women because a large part of the employed women work in these industries. In the same way, industries such as the manufacturing industry and the construction industry score high values for men. The profiles show that the data in its disaggregated form show interesting differences between industries.

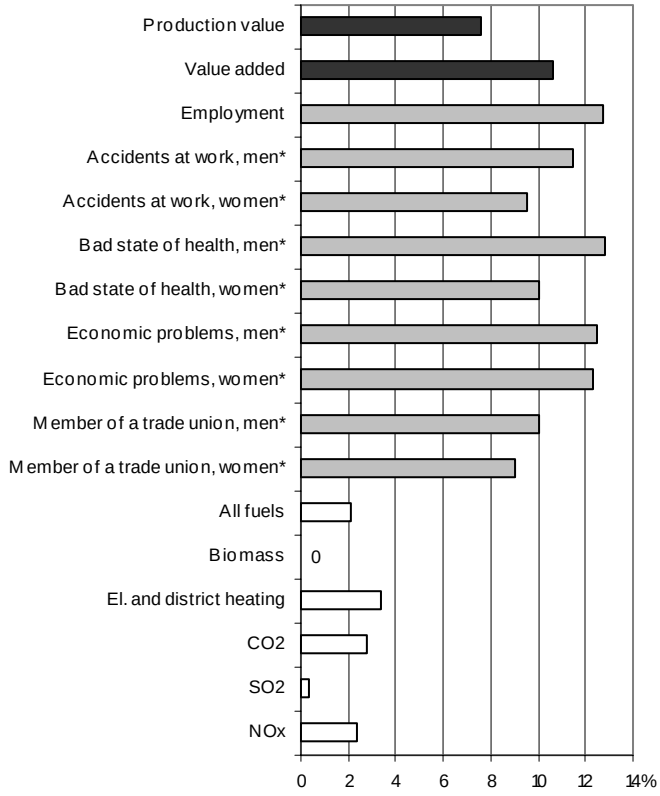
Diagram 82. Industry profiles for indicators on working environment in 2000-2002. Per cent of total employed persons contributed by each industry.



Another type of industry profile shows variables from all three dimensions of sustainable development [6] in the same diagram for one selected industry, as shown in *diagram 83*. This diagram shows how much, in per cent, the wholesale and retail trade industry contributes to the total of all industries in the same way as *diagram 82*. For example, the wholesale and retail trade industry makes up 12 per cent of all reported accidents at work for men, emits 3 per cent of all carbon dioxide and contributes to 11 per cent of the total value added.

[6] The three dimensions of sustainable development are social, environmental and economic.

Diagram 83. Industry profile for wholesale/retail trade industry (NACE 50-52) in 2000.



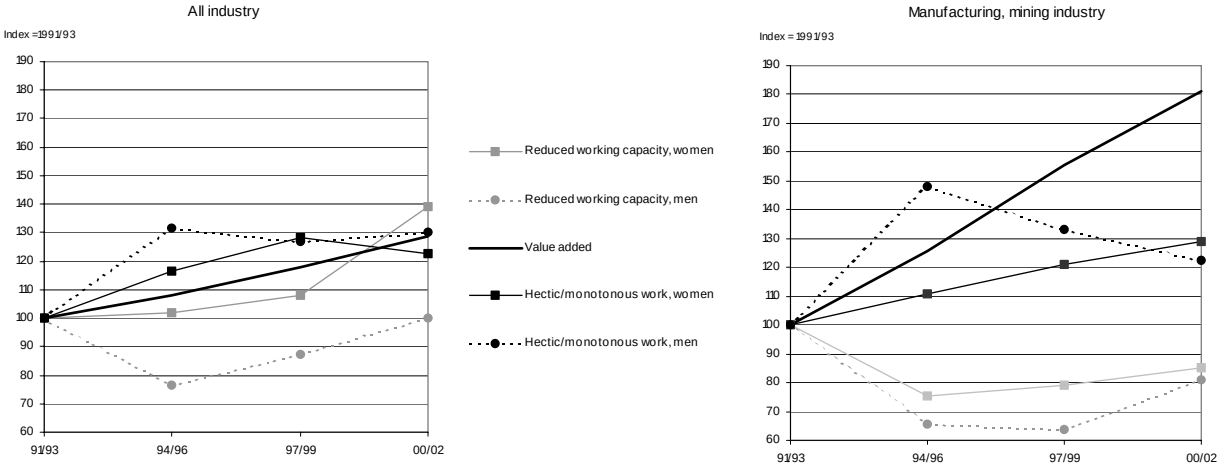
* Data for 2000-2002.

7.1.2 Decoupling

Decoupling diagrams are used to compare economic growth (e.g. GDP) and environmental impact (e.g. CO_2 emissions). Decoupling means that the connection between economic growth and environmental impact is broken. By indexing the variables, comparison of these changes are shown despite different measurement units.

Diagram 84 shows that the value added has increased by 30 per cent in all industries and the share of employed men and women exposed to hectic and monotonous work increased by 30 per cent (men) and 23 per cent (women). This means that no decoupling has occurred in this case. No decoupling had occurred either for employed persons with reduced working capacity, since there was no decline between 1991 and 2002. By reasoning in the same way and looking specifically at the manufacturing and mining industry (*diagram 84*), it can be seen that decoupling has occurred for reduced working capacity but not for hectic and monotonous work.

Diagram 84. Reduced working capacity and hectic/monotonous work between 1991-2002. Index.



Note: value added, 91/93=93, 00/02=00/01

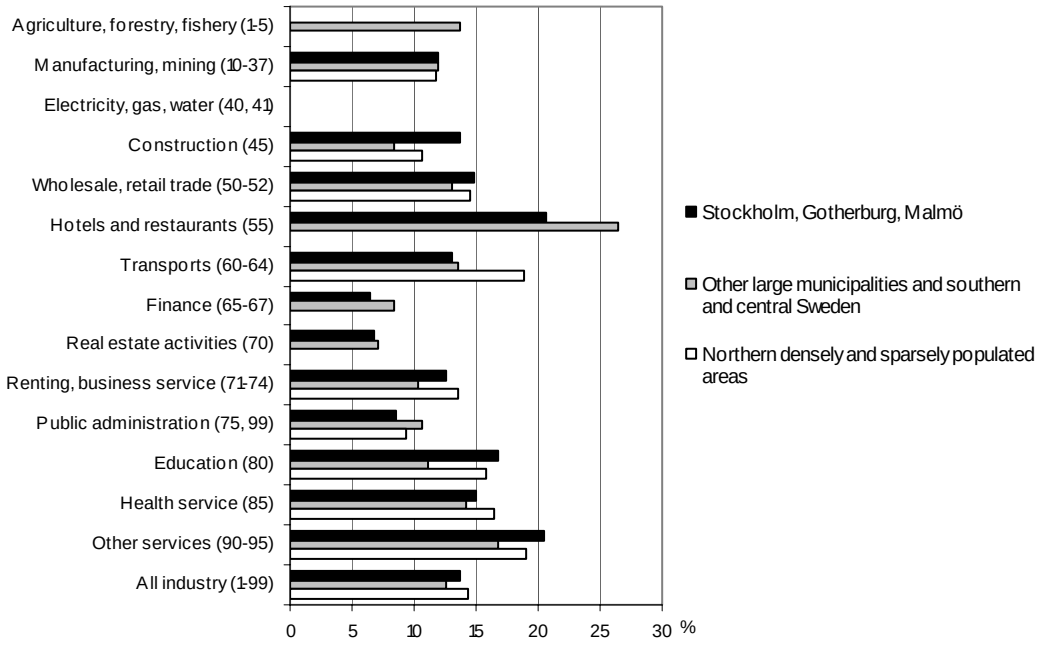
7.2 Other analyses of social data

In chapters 3 to 6, the social data was presented by industry, gender and socioeconomic group. Time series were also presented. It is also possible to disaggregate the social data by region, level of education and age. This will be shown here using examples from the indicators presented earlier in the report.

7.2.1 Region

The environmental accounts can also be used at region level, in order to compare regions with each other. *Diagram 85* illustrates the indicator "economic problems" broken down by region as well as industry. It can be seen that the differences between the regions are generally small (see all industries) but, when broken down into separate industries, there are larger differences. Employed men and women in the transport industry, for example, more often had economic problems if they lived in the northern densely and sparsely populated areas than if they lived in larger cities or in the south of Sweden.

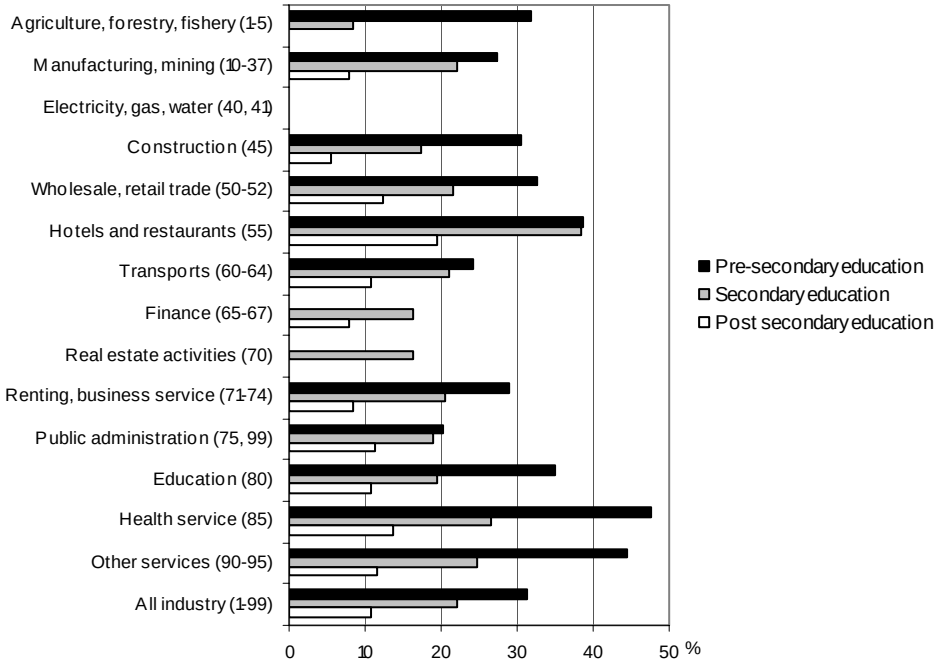
Diagram 85. Persons experiencing economic problems by region in 2000-2002. Per cent of employed persons.



7.2.2 Education level

Diagram 86 shows an example of an indicator broken down by educational level. The diagram shows that there are large differences between the education groups. Employed persons with only pre-secondary education smoked on a daily basis to a much higher extent than employed persons with post-secondary education. The trend was similar among the different industries.

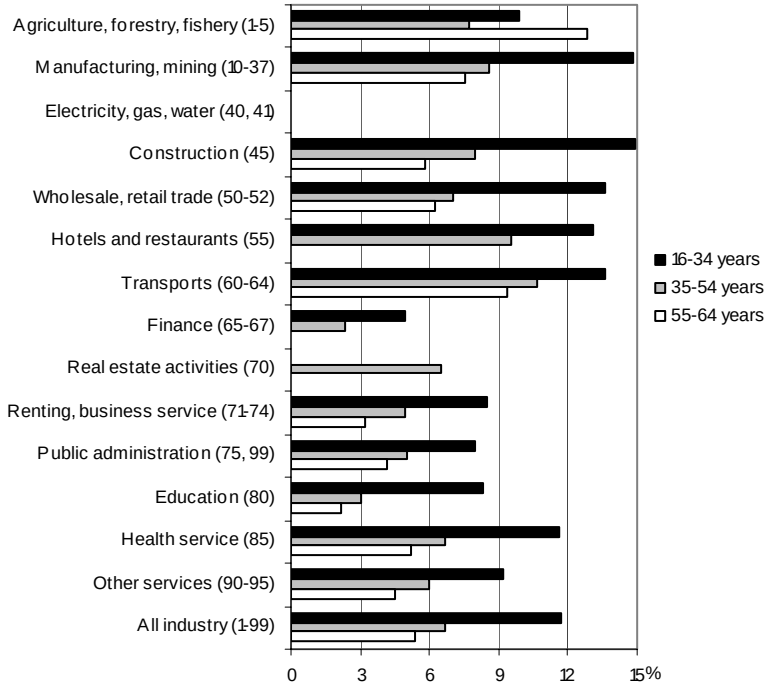
Diagram 86. Everyday smoking by educational level in 2000/2002. Per cent of employed persons.



7.2.3 Age

It is also possible to divide the data by age, as in *diagram 87*. The willingness to participate in political discussions was more common among older than younger employed persons in 2000-02.

Diagram 87. Does not participate in discussions on politics by age in 2000-2002. Per cent of employed persons.



7.3 Other possible indicators and sub-groups

In addition to the indicators and sub-groups that have been discussed in this report, there are other indicators and sub-groups in ULF, such as library visits, received social assistance, immigrants and children, that can perhaps be accounted by industry, but more investigation needs to be done to see if this is possible.

8 Conclusions

This report shows that it is possible to include many different aspects of the social field in the environmental accounts. This is demonstrated by presenting data distributed by industry from the Living Conditions Survey (ULF) in Sweden, surveys which has industry as a background variable. Including this social dimension in the environmental accounts also makes it possible to analyse the social data together with the system's economic and environmental data. This can be done using methods frequently used in the environmental accounts, such as different kinds of industry profiles and decoupling diagrams, in which social data are treated in the same way as economic and environmental data. Adding social data on industry level to the environmental accounts also adds the social dimension of sustainable development to the environmental accounts, which makes it possible to analyse the area further on an industry level.

In the report, it is shown that it is possible to present data on working environment, health and financial problems by sex, socioeconomic group and region etc. in an accounting framework, such as by industry. This can present new angles of ULF data, since these data are not normally presented by industry. Presenting ULF data together with other economic and environmental data also gives the information new dimensions and usages.

Throughout the report, the results have shown that there are significant differences between the presented industries, proving that it is interesting to look at social data also in this way. The results also show that, for some industries, the social data are comparable with the situation for unemployed persons. Some of the results are more unreliable than others but, because three years have been added together, the results are more reliable than otherwise.

8.1 The Swedish strategy for sustainable development

The indicators in this report could be used to follow up part of the Swedish strategy for sustainable development[7] , for example, for the area "working life" in the strategy. The objective for this area, among other things, is to ensure good working conditions. Because the working environment indicators in the report are presented by industry, they could be a useful tool when this area of the strategy is followed up, as a complement to indicators covering all employed persons. For instance, the result of the indicator "hectic and monotonous work" showed large differences between the industries in the development of the number of men and women exposed to hectic and monotonous work since 1988. For this specific indicator, the development was slightly negative, with a small increase overall, but there were large differences between the industries. It may therefore be useful to look into which industries show the worst results for the different indicators and then reflect on what can be done.

Another area in the strategy where the indicators could be used for follow-up is "sustainable economic life", meaning that enterprises should accept greater social and environmental responsibility. Since the indicators in this present report cover and illustrate different areas of living conditions by industry, they could be used to provide a picture of the living conditions for persons employed in Swedish enterprises. Comparisons could be made between the enterprises that accept more social and environmental responsibility and the results on the living condition indicators for those employed in the industry that the enterprise is in.

[7] En svensk strategi för hållbar utveckling 2003/04:129 [2004], *(A Swedish strategy for sustainable development 2003/04:129).*

8.2 Future work

Future work on the environmental accounts will focus further on social data and its connections and relations to other data in the Swedish environmental accounts, such as economic activity and environmental impact data. Future analyses in the area of sustainable development can also now include all three dimensions. Industry profiles will from now on also include social information whenever suitable.

There are certainly many other ways of presenting and analysing the social dimension and its links to the environmental and economic field than those presented in chapter 7 of this report. There may also be other areas in the system of environmental accounts that are closely related to the social variables presented here, for instance when looking at the households and their effect on sustainable development.

It may also be possible to present information on a more detailed industry breakdown than presented in this report, by using other methods from the ULF data or using other surveys. Other surveys may also be used to include more social variables in the environmental accounts, variables which are not covered by ULF. These variables could include occupational diseases, wages, or women and men in leading positions.

Some of the information presented in this report may be used when designing future policy instruments, or when discussing if the current policy instruments are efficient enough. The indicators in this present report, or other indicators from ULF not included in this report, may be used to design new instruments or when reviewing the current ones. One possible future use of this social data may therefore be to elaborate new policy instruments, focusing more directly on certain industries that show extraordinary results.

Another area of interest would be to look further into the reasons behind the results presented in this report. The underlying factors of why the result differs so much between industries, sex, socioeconomic group, region and educational level are issues that could be of scientific interest.

Glossary (English/Swedish)

A	
Accident	Olycksfall
Appeal	Överklaga
C	
Cash reserve	Kontantmarginal
Casual work	Tidsbegränsad anställning
D	
Deafening noise	Öronbedövande buller
Decoupling	Frikoppling
E	
Economic problems	Ekonomiska problem
Employee	Anställd
Employed	Sysselsatt
Environmental accounts	Miljöräkenskaper
H	
Health	Hälsa
Heavy lifting	Tunga lyft
Hectic	Jäktigt
Holiday trip	Semesterresa
I	
Impaired hearing	Nedsatt hörsel
Industry	Bransch
M	
Material assets	Materiella tillgångar
Mentally strenuous	Psykisk ansträngning
Monotonous	Enformigt
O	
Obesity	Fetma
Overcrowded	Trångbodd
S	
Salaried employee	Tjänsteman
State of health	Allmänt hällsotillstånd
Self-employed	Egenföretagare
Severe problems	Svåra besvär
Survey	Undersökning
T	
Trade union	Fackförening
V, W	
Voter turnout	Valdeltagande
Weekend house	Fritidshus
Worker	Arbetare
Working capacity	Arbetsförmåga
Working environment	Arbetsmiljö
Working position	Arbetsställning

Appendix 1 - The Swedish Living Conditions Survey - design and methods[8]

Introduction

The living conditions survey in Sweden (ULF) aims to shed light on the living conditions of the Swedish population, including current living conditions and changes over time, relationships between problems in different areas and differences between various social categories.

The ULF survey has been expanded in stages. The first survey was implemented in 1974 and included five social domains: health, economic resources, employment and working environment, education and housing. Leisure and social relations were added in 1976 and, in 1978, political resources, safety and security and transportation were added. Since 1979, the four main themes of ULF have been according to the schedule below.

Table A1. Themes in the ULF survey

MAIN THEME	SCHEDULED INCLUSION			
SOCIAL RELATIONS				
Political resourcesr	1978			
Safety and securityt	1978	1984-85	1992-93	2000-2001
Social relations, family	1976			
WORK				
Employment and working environment	1975	1979	1986-87	1994-1995
Economic resources	(1977)			
Education				
HEALTH	1975 (1977)	1980-81	1988-89	1996-1997
"PHYSICAL ENVIRONMENT"				
Housing	1975			
Transportation	1978	1982-83	1990-91	1998-1999
Leisure	1976			

Every ULF survey includes a number of basic indicators for all of the above mentioned domains. Certain questions are asked every year in order to provide consistent background variables, such as lifecycle stage, family type and socioeconomic status. Other recurrent questions provide an information base that makes it possible to continuously follow developments in selected areas.

The first survey, conducted in 1974, was regarded as a pilot, and all data collected at that time have been discarded. Otherwise, the data from all surveys from 1975 onwards are available for further analysis.

[8] Living conditions, appendix 16, The Swedish living conditions survey, design and methods, Technical report from ULF 1990-93 *(download at www.scb.se)*.

During the period 1975-1979, all individuals who were married or cohabiting with the selected respondents were also included in the interview sample. From 1980 onwards, the sample was limited to the selected respondents and only those individuals were interviewed; the interview did, however, include several questions on the employment of the spouse/partner.

An experiment with panel selection was conducted during one quarter of 1983. Since 1986, a panel has been routinely included in the surveys.

The samples during 1975-1979 included individuals aged 16-74. From 1980 onwards, the upper age limit has been 84 years. In the 1988-1989 surveys, there was no upper age limit.

Table A2. Annual variation of sample size and non-response

	Net sample	Number of Interviews	Total non-response %	… of which: Refused	Unavailable
1975	14 256	11 582	18.8	17.8	0.6
1976	14 411	11 144	21.0	19.5	1.1
1977	14 494	11 699	19.3	17.6	1.1
1978	12 119	10 307	15.0	13.6	0.8
1979	11 389	9 468	16.9	15.4	1.0
1980	8 418	7 261	13.7	11.3	1.6
1981	8 903	7 703	13.5	10.3	2.1
1982	8 419	7 290	13.4	10.4	2.1
1983	7 952	6 663	16.2	13.2	2.2
1984	8 673	7 211	16.9	13.6	2.2
1985	7 915	6 585	16.8	12.3	2.8
1986	6 171	4 774	22.6	17.7	3.1
1987	8 754	7 052	19.4	14.4	2.9
1988	8 189	6 514	20.5	14.6	3.7
1989	8 552	6 781	20.7	14.5	4.0
1990	7 946	6 191	22.1	16.7	3.5
1991	7 402	5 827	21.3	16.0	4.0
1992	7 481	5 980	20.1	14.8	3.3
1993	7 685	6 190	19.5	13.8	4.1
1994	7 494	6 001	19.9	13.9	4.5
1995	7 475	6 014	19.6	13.2	4.4
1996	7 483	5 891	21.3	14.4	5.0
1997	7 467	5 807	22.2	14.4	5.8
1998	7 472	5 732	23.3	16.3	5.1
1999	7 482	5 734	23.4	15.1	6.1
2000	7 456	5 680	23.9	15.3	6.8
2001	7 469	5 805	22.1	14.6	5.9
2002	7 969	5 973	25.0	16.0	6.8

Interview objects, population and population groups

The purpose of each annual survey is to gather statistics on all permanent residents in Sweden, aged 16-84 years during the year in question. To qualify as a permanent resident, the individual must be officially registered as such, and not have been outside the country for any great length of time.

The survey results are usually shown by various categories of the population, e.g. sex, age, lifecycle stage, socioeconomic status, region of residence, nationality, etc.

Data collection continues throughout the year, and the results are expressed as an average for the year for the relevant age categories. For that reason, the demographic totals in ULF deviate

somewhat from official statistics, which reflects the composition of the population at the turn of the year. The deviation is a consequence of mortality, emigration and immigration, and is limited in size. For certain variables, it is also possible to derive data relating to households or children, for example.

The relatively detailed information from the interviews on the composition of households makes it possible to sort them by alternative criteria. By one definition that is used in certain contexts, households are divided into *married, cohabiting couple* and *single*, with or without children under eighteen years of age. According to this definition, children aged 18 and over, as well as other individuals sharing the dwelling place, comprise their own households.

In the following technical discussion, *object* is used as a common term for all social entities, including individuals, households, etc.

Sampling procedure

The survey involves a large number of variables, with varying demands for statistical precision. Accordingly, there is no simple formula for determining sample size. It is determined, instead, on the basis of data analysis requirements for various population groups. Population groups are any category of the population on which specific data are collected. Every year a systematic sample is drawn by age group from Statistics Sweden's Total Population Register (TPR). Such a sample is regarded as a simple random sample. All individuals who have been included in ULF at any time during the preceding seven years are eliminated from the sample. The final sample also includes a panel of individuals who participated in the survey eight years previously. The panel is supplemented with immigrants and other individuals aged 16-23 who have "grown into" the population.

Over-/under-coverage and non-response

Over-coverage means that the sampling frame includes subjects that are not part of the population. These are individuals who have died, or have lived outside the country for a long period of time.

Under-coverage refers to individuals who are part of the population, but are not included in the sample and who therefore cannot be selected. Under-coverage is due primarily to errors in essential statistics, or to the fact that some individuals are not registered in essential statistics until after the sampling frame has been defined.

Non-response refers to individuals who are part of the sample but who do not participate in the survey. There is also a category of partial non-response, referring to individuals who participate but do not respond to all questions. The non-response rate for single questions does not usually exceed a couple of per cent.

Estimation and variance calculations

The survey focuses primarily on three measures of both population groups and the total population: total number of objects with a certain characteristic (in most cases, individuals and households), percentage and mean value.

As noted above, the sample is systematically selected. When characteristics of the estimators are discussed, however, the selection is made under the assumption that it has the same value as a simple random sample. The systematic selection procedure can be more precise than a simple random sample, for which the variance estimators tend to result in overestimation.

Post-stratification weightings are computed for non-response. The data are stratified into 82 strata, by region, age, sex and marital status. The estimators of the post-strata are unbiased. Estimates of other variables may be somewhat biased as a result of non-response, but empirical studies indicate that the effect is negligible in most cases.

For cost reasons, precise variance estimates have not been carried out. In order to permit some kind of statement regarding the estimates, tables showing the approximate length of half the confidence interval have been calculated for both estimates of percentages and differences between percentages in population groups.

Partial responses occur in connection with several variables, although at a fairly low frequency in ULF. Partial responses lead to problems of quality and calculation. The quality problem arises from the uncertain effect of an increase in non-response for certain variables. The calculation problem stems from the fact that the estimated distribution of responses to a given question may not equal the number of subjects in the entire population.

Normally the ULF tables are corrected for partial responses on a proportional basis. When the frequency of such responses is low (i.e. not greater than three per cent) not much attention is paid to them. However, when there is a high frequency of partial responses, the importance of the proportional adjustments may be discussed in connection with presentation of the survey results.

Research implementation

The interview questionnaires have been processed by SCB in consultation with expert committees on the various domains of living conditions. Before every new survey, a number of sample interviews are conducted in order to field-test new questions and to get some idea of much response time they require.

Data collection is primarily carried out through face-to-face interviews. Telephone interviews are conducted if the subject specifically expresses such a preference (a small number of cases) or in connection with the follow-up phase. About 20 per cent of the interviews are done by telephone.

Prior to the start of the ULF series in 1974, over 200 interviewers were provided with the necessary training. Since then, additional interviewers have been recruited and trained every year. Following a basic introductory course in survey methods, new interviewers participate in an additional one-day course that includes approximately six hours of intensive training. The various aspects of interview protocol are thoroughly reviewed and practice in handling certain complicated questions is provided.

Prior to being interviewed, every interviewee receives a brief explanatory letter and a brochure describing the purpose of the survey and the relevant provisions of Swedish privacy law. The subjects included in the panel receive a slightly different version of the letter which includes a reminder that he or she has been interviewed previously. Interview appointments are usually made by telephone.

Interviewees who are interested in the survey results are given a collection of articles that are based on ULF research findings and discuss living conditions from various perspectives.
The data registration, editing and coding is done interactively in a PC and visual basic environment. The coding applies primarily to the following variables:

Education level in ULF corresponds to official Swedish education nomenclature (SUN), with the single exception that SUN's Level 3 (maximum two years of high school) is broken down into two levels: level 31 - between two months and one complete academic year of high school and level 32 – one to two years of high school.

Industry of the interview object is coded with the same set of two-digit codes that are used in Statistics Sweden's Labour Force Surveys (AKU). This set of codes is compatible with Sweden's standard for industrial classification (SNI), which in turn is compatible with the international standard NACE.

Occupation is recorded alphabetically and matched against the national occupational register which includes codes for both occupation and socioeconomic status. In cases for which there is no match, the coding is done manually. The occupational codes follow, for the most part, the Nordic Classification of Occupations (NYK), which is in turn based on the International Standard Classification of Occupations (ISCO).

Socioeconomic status is based largely on information about occupation and job position, past or present.

Illness codes follow the same principles as those of the International Classification of Diseases (ICD).

In addition to the interview data, various kinds of information from the same year are also obtained from other Statistics Sweden databases, such as on income.

Statistical reliability

Coverage errors stemming from non-observations can be the result of under-coverage; that is, some subjects in the survey population are not included in the sample frame. In ULF, under-coverage errors are few, in both absolute and proportional terms, and can therefore be dismissed as negligible.

Over-coverage presents another type of error but this does not lead to any systematic error, since the objects in question (deceased, emigrants) are excluded from the sample prior to the interview phase. However, over-coverage does result in a lower grade of precision than would be the case if it did not occur. However, this effect is very low in ULF. Over-coverage amounts to roughly one per cent for both the sample and the population. Estimates are corrected for over-coverage.

Non-response stems from the complete non-participation of the interview object and/or from partial non-response regarding certain variables. The extent of non-response error is a function of the relationship between the value of a given variable and the object's willingness to participate in the survey or to respond to the relevant question. If there is no such relationship, there is no risk of error in the estimates. Evaluating the extent of non-response error is generally very difficult.

Obviously, the more that non-response objects resemble those who do respond, the less the effect the non-response error has on the estimates. Combining data in subgroups tends to reduce the effect of non-response error but it cannot completely eliminate it. A large amount of

non-response among a given subgroup can result in a sizable systematic error. For example, frequent non-response among social welfare recipients could distort the data on the living conditions of lower socioeconomic categories.

The extent of sampling or random error can be estimated from the survey data. It is normally stated in terms of a confidence interval. The degree of confidence is a measure of the probability that a given procedure will result in an interval that includes the expected value of the estimate. The interviewer may misunderstand certain instructions or the object's responses, which contributes to the survey's level of systematic error. Systematic mistakes by an occasional interviewer may not distort the survey data to any great extent but it is not possible to specify how many errors of that sort occur.

The respondent may remember incorrectly, deliberately or unconsciously provide distorted responses or may simply be unable to answer the question. Most of the questions in ULF refer to the present time, for which memory errors should not constitute a major source of error. However, responses to questions such as "How often during the past twelve months have you..?" should be interpreted with caution. Errors may arise from attempts by the respondent to present him or herself in the most favourable light - to provide "socially acceptable" answers or those that the respondent believes the interviewer would agree with. ULF contains only a small number of attitude questions that might possibly carry this risk. But there are a number of questions related to habits and behaviour, for which this particular risk of error cannot be excluded.

The questions in ULF are, for the most part, not very difficult to answer. It is fairly certain that some questions are interpreted differently by different respondents. Particular care should be taken when interpreting responses to questions relating to attitudes and the frequency of specific activities, such as physical exercise and spending time with family and friends.

Apart from simple carelessness, data processing errors may be the result of misunderstood instructions regarding data registration and coding. The majority of such errors are corrected using a quality control process. Some limited studies of coding accuracy have been carried out (coding of socioeconomic status, illness, etc.), and the results do not indicate any significant incidence of systematic error.

Reports

Information on the Living Conditions series of research is published in four different kinds of report. Basic information from ULF is published in the so-called *component reports*, which are divided into sectors and are issued every eighth year.

In addition to these basic reports, there is another type of report providing an overview of the distribution and development of living conditions. A third type of report deals with the situation of disadvantaged groups, including broad analyses of the living conditions of special categories, such as disabled persons, social welfare recipients and retired persons. Finally, there is a fourth type of report dealing with special limited problems related to living conditions.

Appendix 2 - Industry classification according to NACE

Table A3. Industry classification according to NACE

NACE (code)	Industry
01	Agriculture
02	Forestry
05	Fishing
10-14	Mining and quarrying
15-37	Manufacturing industry
15-16	Food products, beverages and tobacco industry
17-19	Textiles, clothing and leather
20	Wood and wood products
21	Pulp and paper
22	Publishing and printing
23	Coke and petroleum products
24	Chemicals and chemical products
25	Rubber and plastic products
26	Other non-metallic mineral products
27	Basic metals
28	Fabricated metal products
29	Machinery and equipment
30	Office machinery and computers
31	Electrical machinery and apparatus
32	Telecommunications
33	Medical and optical instruments, watches and clocks
34-35	Transport equipment
36-37	Manufacturing industry n.e.c., e.g. furniture and games and toys.
40	Electricity, gas, steam and hot water supply
41	Water purification
45	Construction
50-52	Wholesale and retail trade
55	Hotels and restaurants
60-63	Transport and storage
60.1	Transport by rail
60 other	Other land transport
61	Transport by sea
62	Transport by air
63	Supporting transport activities, activities by travel agencies
64	Post and telecommunications
65-67	Financial intermediation, e.g. banking and insurance.
70.2	One and two-family houses and leisure houses
70 other	Other real estate activities
71-74	Renting and business service companies, e.g. renting of automobiles computer activities and advertising.
73	Research and development
80-85	Educational and health work establishments
90-95	Other community and personal service establishments, e.g. motion picture, sporting activities, hairdressing and treatment of sewage.

Appendix 3 - Number of observations and employed persons

Table A4. Number of observations (respondents) by industry in 2000-2002

Industry	Men	Women	Workers	Salaried employees	Self-employed, farmers
Agriculture, forestry, fishing (1-5)	138	37	53	14	108
Manufacturing, mining (10-37)	1 336	476	1 050	683	79
Electricity, gas, water (40, 41)	50	19	15	54	0
Construction (45)	596	73	383	143	143
Wholesale & retail trade (50-52)	650	576	535	501	190
Hotels and restaurants (55)	121	168	185	59	45
Transport (60-64)	416	184	308	230	62
Finance (65-67)	83	135	0	216	2
Real estate (70)	89	40	51	62	16
Renting & business services (71-74)	774	459	172	905	156
Public administration (75, 99)	291	355	75	570	1
Education (80)	259	590	76	768	5
Health services (85)	243	1 747	1 123	839	28
Ohter services (90-95)	220	278	107	299	92
All industries (1-99)	5 283	5 140	4 139	5 348	936

Table A5. Number of observations (respondents) by industry in 1988-2002

Industry	1988/1990					1991/1993				
	Men	Women	Workers	Salaried employees	Self-employ., farmers	Men	Women	Workers	Salaried employees	Self-employ., farmers
Agriculture, forestry, fishing (1-5)	326	149	121	42	293	315	118	120	48	264
Manufacturing, mining (10-37)	1 933	749	1 667	898	98	1 584	614	1 249	819	111
Construction (45)	752	64	491	174	148	669	50	401	167	147
Wholesale, hotels, restaur. (50-52, 55)	673	832	706	570	218	787	749	684	593	250
Transport (60-64)	607	266	478	302	88	523	267	410	299	74
Research, education, health services (73, 80, 85)	686	2 865	1 662	1 860	21	620	2 704	1 554	1 717	23
All industries (1-99)	6 181	5 853	5 600	5 276	1 078	5 687	5 479	4 878	5 090	1 112

Industry	1994/1996					1997/1999				
	Men	Women	Workers	Salaried employees	Self-employ., farmers	Men	Women	Workers	Salaried employees	Self-employ., farmers
Agriculture, forestry, fishing (1-5)	247	83	88	28	213	189	62	62	19	170
Manufacturing, mining (10-37)	1 468	512	1 160	708	95	1 456	565	1 146	764	110
Construction (45)	529	53	332	106	143	477	40	301	108	108
Wholesale, hotels, restaur. (50-52, 55)	737	760	616	539	262	758	719	648	558	271
Transport (60-64)	497	230	369	272	68	440	194	314	255	65
Research, education, health services (73, 80, 85)	687	2 524	1 310	1 799	31	573	2 316	1 286	1 575	28
All industries (1-99)	5 378	5 151	4 278	4 961	1 052	5 275	5 023	4 216	5 074	1 007

Table A5. Number of observations (respondents) by industry in 1988-2002, continued.

Industry	2000/2002				
	Men	Women	Workers	Salaried employees	Self-employ., farmers
Agriculture, forestry, fishing (1-5)	138	37	53	14	108
Manufacturing, mining (10-37)	1 336	476	1 050	683	79
Construction (45)	596	73	383	143	143
Wholesale, hotels, restaur. (50-52, 55)	784	745	726	560	243
Transport (60-64)	416	184	308	230	62
Research, education, health services (73, 80, 85)	545	2 369	1 203	1 678	33
All industries (1-99)	5 283	5 140	4 139	5 348	936

Table A6. Estimated employed persons by two different industry groupings in 2000-02, 000s

Industry	Men	Women	Workers	Salaried employees	Self-employed, farmers
Agriculture, forestry, fishing (1-5)	55	14	21	6	42
Manufacturing, mining (10-37)	551	184	424	278	32
Electricity, gas, water (40, 41)	21	7	6	22	0
Construction (45)	248	29	158	59	59
Wholesale, & retail trade (50-52)	272	225	213	205	78
Hotels and restaurants (55)	49	65	73	24	18
Transport (60-64)	174	73	128	94	26
Finance (65-67)	35	54	0	88	1
Real estate (70)	37	16	21	25	7
Renting, business services (71-74)	328	182	70	375	65
Public administration (75, 99)	119	137	30	226	0
Education (80)	109	232	30	310	2
Health services (85)	101	676	436	330	11
Ohter services (90-95)	93	109	43	120	37
All industries (1-99)	2 202	2 006	1 656	2 169	384

Industry	Men	Women	Workers	Salaried employees	Self-employed, farmers
Agriculture, forestry, fishing (1-5)	55	14	21	6	42
Manufacturing, mining (10-37)	551	184	424	278	32
Construction (45)	248	29	158	59	59
Wholesale, hotels, restaur. (50-52, 55)	326	291	289	229	99
Transport (60-64)	174	73	128	94	26
Research, education, health services (73, 80, 85)	229	921	468	669	13
All industries (1-99)	2 202	2 006	1 656	2 169	384

I serien Miljöräkenskaper har följande rapporter utkommit

		Ansvarig myndighet
1998:1	SWEEA, Swedish Economic and Environmental Accounts Svenska miljöräkenskaper, En lägesrapport från Konjunkturinstitutet och Statistiska Centralbyrån 1994	KI och SCB
1998:2	SWEEA, Swedish Economic and Environmental Accounts English version 1994	KI och SCB
1998:3	Materialflöden och kretslopp i de svenska miljöräkenskaperna - en förstudie 1995	SCB
1998:4	Industrins miljöskyddskostnader 1991	SCB
1998:5	Aggregering av miljödata till miljöhot – en förstudie 1996	SCB
1998:6	Samband mellan miljö och ekonomi, en rapport om fysiska miljöräkenskaper i Sverige	SCB
1998:7	Kostnader för att minska utsläpp av kväveoxider och flyktiga organiska ämnen	NV
1998:8	Avfall 1993	SCB
1998:9	Svenska miljöräkenskaper för svavel och kväve samt Sveriges kostnader för kväveutsläpp	KI
1998:10	Miljöräkenskapsprojektet vid Konjunkturinstitutet 1992-1997 med bilagorna, Gröna nationalräkenskaper, Att konstruera ett miljöräkenskapssystem.	KI
1998:11	Indikatorer för hållbar utveckling – en pilotstudie	SCB
1999:1	Minskade koldioxidutsläpp genom förändrad materialanvändning - en förstudie	SCB
1999:2	Miljöföretag och gröna jobb i Sverige	SCB
1999:3	Skogsräkenskaper - en delstudie avseende fysiska räkenskaper	SCB
2000:1	The environment industry in Sweden 1999	SCB
2000:2	Industrins miljökostnader 1997 - resultat från en svensk pilotstudie	SCB
2000:3	Miljöskatter och miljöskadliga subventioner	SCB
2000:4	En framtida nationell materialflödesstatistik – användning av naturresurser, substanser och kemikalier i produktion och konsumtion.	SCB
2000:5	Miljöpåverkan av svensk handel - resultat från en pilotstudie	SCB
2000:6	Vattenräkenskaper – en pilotstudie om uttag, användning samt utsläpp, fysiska och monetära data	SCB

2000:7	Metod för samhällsekonomisk analys av miljöåtgärder	NV
2000:8	The environment industry in Sweden 2000 – Employment and economic data for enterprises primarily producing environmental goods and services	SCB
2002:1	Konsekvenser av restriktioner på koldioxidutsläpp – ekonomiska kalkyler fram till år 2010	KI
2002:2	Environmental Impact of Swedish Trade	SCB
2002:3	Miljöräkenskaper. Innehåll, användning och användare	SCB
2003:1	Samhällsekonomiska konsekvenser för Sverige av begränsad handel med utsläppsrätter enligt EU:s direktiv	KI
2003:2	Water Accounts 2000 - with disaggregation to Sea Basins	SCB
2003:3	Indikatorer för hållbar utveckling – baserade på miljöekonomisk och social statistik	SCB
2003:4	Environmental subsidies – a review of subsidies in Sweden between 1993 and 2000	SCB

I Sveriges officiella statistik har publicerats

Na 53 SM 9601	Miljöräkenskaper, Fysiska räkenskaper för energi och utsläpp till luft 1989, 1991 och 1993	SCB
MI 53 SM 9901	Miljöräkenskaper, Fysiska räkenskaper för energi och utsläpp till luft 1993 och 1995	SCB
MI 23 SM 0001	Miljöskyddskostnader i industrin 1997	SCB
MI 23 SM 0101	Miljöskyddskostnader i industrin 1999 och 2000	SCB
MI 23 SM 0201	Miljöskyddskostnader i industrin 2001	SCB
MI 23 SM 0301	Miljöskyddskostnader i industrin 2002	SCB
MI 23 SM 0401	Miljöskyddskostnader i industrin 2003	SCB
MI 53 SM 0101	Miljöräkenskaper 1993 – 1998	SCB

Rapporterna kan beställas från:
SCB, Publikationstjänsten, 701 89 Örebro, fax: 019-17 68 00,
e-post: publ@scb.se, eller från respektive ansvarig myndighet

Miljöräkenskaper är ett informationssystem som utvecklas för att systematiskt beskriva sambanden mellan miljö och ekonomi. Statistik om miljö och ekonomi ger underlag för kostnadsberäkningar av miljöåtgärder och miljöskador, analyser av miljöpolitik och ekonomisk politik samt indikatorer över miljötillstånd och uthållig utveckling. Inom ramen för arbetet med att utveckla miljöräkenskaper för Sverige bedrivs verksamhet vid tre olika myndigheter.

Statistiska centralbyrån utvecklar fysiska miljöräkenskaper, dvs. ett statistiskt system i vilket miljöpåverkan och resursanvändning i fysiska termer kopplas samman med ekonomisk statistik om produktion och konsumtion. Systemet utgör underlag för analyser och indikatorer.

Konjunkturinstitutet utvecklar miljöekonomiska modeller där man kan göra analyser av hur olika politiska förslag och beslut påverkar såväl miljön som landets ekonomi. Konjunkturinstitutet gör också värderingar och kostnadsberäkningar av miljöpåverkan, dvs. monetära miljöräkenskaper.

Naturvårdsverket beskriver tillståndet i de svenska ekosystemen och hur dessa förändras. Naturvårdsverket gör också beräkningar av kostnaderna för att minska utsläpp och annan miljöpåverkan.

Rapport 2004:1

Social statistics by industry
– *Introducing the social dimension into environmental accounts*

Social statistik per bransch
– Hur den sociala dimensionen kan föras in i miljöräkenskaperna

Rapportens syfte är att visa hur sociala aspekter kan integreras i miljöräkenskapssystemet. Detta har gjorts genom att fördela data inom olika områden från Undersökningar om Levnadsförhållanden (ULF) per bransch. De områden som behandlas i rapporten är arbetsmiljö, hälsa, ekonomiska problem och materiella tillgångar samt sociala nätverk och politiska resurser.

ISSN: 1403-1337
ISBN: 91-618-1256-0

Statistikpublikationer kan beställas från SCB, Publikationstjänsten, 701 89 Örebro, telefon: 019-17 68 00, fax: 019-17 64 44, e-post: publ@scb.se. De kan också köpas genom bokhandeln eller direkt hos SCB, Karlavägen 100 i Stockholm och Klostergatan 23 i Örebro. Aktuell publicering redovisas i SCB:s publikationskatalog och på vår webbplats (www.scb.se). Ytterligare hjälp ges av SCB:s Informationsservice, e-post: infoservice@scb.se, telefon: 08-506 948 01 eller 019-17 62 00, fax: 08-506 948 99.

This statistical report and other publications can be ordered from Statistics Sweden, Publication Services, S-701 89 Örebro, Sweden (phone: +46 19 17 68 00, fax: +46 19 17 64 44, e-mail: publ@scb.se). If you do not fi nd the data you need in the publications, please contact Statistics Sweden, Information Services, Box 24300, S-104 51 STOCKHOLM, Sweden (phone: +46 8 506 948 01, fax: +46 8 506 948 99, e-mail: infoservice@scb.se).

www.scb.se