

REPORT

Swedish research into working life – a resource for welfare, health and growth

Ensuring research of high relevance and quality



SWEDISH COUNCIL FOR WORKING LIFE
AND SOCIAL RESEARCH

Swedish research into working life – a resource for welfare, health and growth

Ensuring research of high relevance and quality

Report from a working group appointed by the board of FAS with the task of providing an up-to-date overview of Swedish research into working life

Table of Contents

List of acronyms	4
FAS foreword	5
Authors' foreword	7
Summary	8
1. Swedish working life	10
Current working life.....	10
The future of working life.....	12
Health at work.....	15
2. What is research into working life?	20
The importance of research into working life.....	21
3. Working life research in Europe	24
4. Swedish research into working life	26
Financing.....	26
Bibliometric analysis.....	29
Recent evaluations	30
Swedish research from an international and Nordic perspective	31
University research into working life.....	33
Communication between researchers and users.....	33
5. Conclusions	35
What would happen if special funds were not set aside for research into working life?	35
Special conditions for research into working life in Sweden.....	35
Strengths and weaknesses	36
Recommendations.....	37
References	38

List of acronyms

AFA	AFA Försäkring (Swedish labour market insurance company)
AKF	Danish Institute of Governmental Research
ALI	Arbetslivsinstitutet (National Institute for Working Life, NIWL)
AV	Arbetsmiljöverket (The Swedish Work Environment Authority)
ERA	European Research Area
ESF	European Social Fund
ETF	European Training Foundation
ETLA	Research Institute of the Finnish Economy
Eurofound	European Foundation for the Improvement of Living and Working Conditions
Fafo	Institute for labour and Social Research, Norway
FAS	Forskningsrådet för arbetsliv och socialvetenskap (Swedish Council for Working Life and Social Research)
FIOH	Finnish Institute of Occupational Health
FOI	Totalförsvarets forskningsinstitut (Swedish Defence Research Agency)
Formas	Forskningsrådet för miljö, areella näringar och samhällsbyggande (The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning)
FWEF	Finnish Work Environment Fund
IFAU	Institutet för arbetsmarknadspolitisk utvärdering (the Institute for Labour Market Policy Evaluation)
ILO	International Labour organization
LO	Swedish Trade Union Confederation
NIWL	National Institute for Working Life (ALI)
NOVA	Norwegian Social Research
OECD	Organisation for Economic Co-operation and Development
PEROSH	Partnership for European Research in Occupational Safety and Health
PTK	Council for Negotiation and Co-operation
RJ	Riksbankens jubileumsfond (an independent foundation with the goal of promoting and supporting research in the Humanities and Social Sciences)
SACO	Sveriges akademikers centralorganisation (Swedish Confederation of Professional Associations)
SCB	Statistiska centralbyrån (Statistics Sweden)
SFI	Danish National Centre for Social Research
SINTEF	Foundation for Scientific and Industrial Research, Norway
SKL	Sveriges kommuner och landsting (the Swedish Association of Local Authorities and Regions)
SNF	Institute for Research in Economics and Business Administration, Norway
STAKES	National Institute for health and Welfare, Finland
STAMI	National Institute of Occupational Health, Norway
TCO	Tjänstemännens centralorganisation (The Swedish Confederation for Professional Employees)
VR	Vetenskapsrådet (Swedish Research Council)
VTT	Technical Research Centre of Finland
WHO	World Health Organization
WRI	Work Research Institute Norway (Arbeidsforskningsinstituttet AFI)

FAS foreword

Swedish research into working life has undergone substantial transformation after the advent of FAS and Vinnova as a consequence of the reform of research policy in 2001. Their task was not only to manage and develop the initiatives taken earlier by the Council for Work Life Research, but also to profile future research on the basis of assignments from the respective authorities. As far as FAS is concerned, focus was to be put on the individual's living conditions, health and development at the workplace and the labour market in a broader sense. Vinnova emphasised research in public and private contexts into the development of activities, effective innovation systems and competitiveness. FAS has applied the principle of open calls in competition with a broad range of support forms, at the same time as Vinnova has developed models for thematic, industry and actor oriented programme initiatives in different areas, often in conjunction with different actors in the public and business sectors.

At the same time as FAS and Vinnova have profiled themselves in slightly different directions in the field of working life, they have taken a number of joint initiatives to analyse developments in the area. In Autumn 2003 a joint national conference was arranged to provide an up-to-date view of the situation and an analysis of the field of working life in the future. This was followed by an assignment to Director Bo Oscarsson to submit concrete proposals on important initiatives. In order to obtain a better foundation for targeted measures, FAS and Vinnova took the initiative in conjunction with the Swedish Institute for Working Life in 2005 to provide a broader mapping of the volume and focus of research. The mapping which was presented in 2006 could not be completed in every respect due to the closure of the Swedish Institute for Working Life. In addition, during the period FAS carried out evaluations of research into labour legislation, labour market policy measures and the working environment.

The former research policy reform (Bill 2004/05:80 Forskning om ett bättre liv [Research into a better life]) launched the idea of establishing "centres of excellence" in different areas. FAS has financed 10 such centres, of which one is clearly oriented to working life and a number of others touch on the problems of working life. The closure of the Swedish Institute for Working Life in 2007 meant a substantial reduction of Swedish research into working life. The research policy bill of 2008 (2008/09:50 Ett lyft för forskning och innovation [A Boost to Research and Innovation]) announced special funds for new long-term initiatives in the area, which led to a research call in the area of working life in the spring of 2009. The call for FAS centres (funding to promising research environments for maximum 10 years) and program support (funding to promising research programmes for maximum 6 years) resulted in 10 applications concerning FAS centres and close to 30 applications for programme support. Three of the centre applications and three of the programme applications won the competition.

Already prior to publication of the most recent bill, FAS' board initiated the appointment of a working group to assess the position of research into working life in the future. The group worked during the autumn of 2008 and presents its results in this report. The assignment concerned the broader interpretation of the working life area, i.e. working environment, work organisation and the labour market, as well as identifying areas of high relevance which would require special initiatives in the future. This could apply to questions concerning funding, the need for stronger infrastructure or new services, quality improving measures, achieving greater international impact or more in-depth contacts with users and clients for research findings.

The group took as its starting point the need for a new and overall view of research into working life, based on high scientific quality from an international comparative perspective, and the usefulness and relevance of working life for trade unions, employers, politicians and decision-makers, as well as society and its citizens as a whole.

The view of FAS is that high-quality research into working life contributes to the promotion of good working conditions for employees and businesses and for developing content and quality in both the private and the public sector. In addition, research can help in solving problems on the labour market and in the welfare society.

Another important starting point for the group was that Sweden as a nation should strive to maintain a strong and in some cases leading position in working life research.

This implies that Swedish research should be more prominent in a European perspective, and also in a broader international perspective. In addition, attention has been focused on the competitive advantages of Swedish research into working life, namely the asset of having good data and registers. The safety and health survey regularly carried out by Statistics Sweden and the Swedish Work Environment Authority, and the study of work-related disorders provide a foundation for official statistics in the area. They provide opportunities for researchers to carry out detailed analyses. One such area which has emerged in recent years concerns the interaction between investigations into the working environment and social insurance data. Other databases and registers are more suited for analysis of the labour market and education. The study into living standards is also worth mentioning in this context. There is thus a need to strengthen in different ways cooperation between authorities producing statistics and researchers.

The report was originally published in Swedish and presented in March 2009 (Svensk arbetslivsforskning – en resurs för välfärd, hälsa och tillväxt). This translated version contains the main text of the report but not the five appendices¹ and a separate section on the needs for working life and occupational health research at the European level.

The group was led by Professor Bengt Järvholm of Umeå University and a Secretariat located at FAS. Associated with the group were Professors Gunn Johansson and Eskil Wadensjö, Stockholm University, and Associate Professor Maria Albin, Lund University. The project coordinator Carin Håkansta worked as the secretary for the group, and views have been received from Elisabeth Lagerlöf, former head of information at the European Foundation for the Improvement of Living and Working Conditions (Eurofound) in Dublin. The Council wishes to thank all these persons for their interesting contributions to the discussion on the current position of research into working life and the need for future measures. Our thanks are also extended to Lennart Sturesson who during autumn 2008 carried out a survey questionnaire directed to former employees at the Swedish Institute for Working Life, as well as to Professor Olle Persson, Umeå University and Staffan Karlson, researcher, at the Swedish Research Council for help with various bibliometric analyses.

Stockholm in September 2009

Swedish Council for Working Life and Social Research

Erland Hjelmquist

Professor and Secretary-General

¹ Appendices:

1. Working life research in Finland, Norway and Denmark;
2. Politics and working life research: Views of the Government, the EU and International organisations;
3. Swedish working life research: details;
4. Research communication with the users;
5. FAS survey to research funding organisations 2008;
6. Evaluation of Swedish occupational health research: the recommendations;
7. Reports on working life research from FAS

Authors' foreword

Identifying the position of Swedish research on working life for the future is a substantial and demanding task which in principle can be extremely wide ranging. In our case the time factor has set a clear limitation. As a result we have largely worked with compiling already existing material. Despite this we have received help from many persons/organisations in collecting publications and data on research funding in Sweden and Europe. We have also received many valuable views on a preliminary version of the report even though there was a short deadline of just two weeks. The work on compiling the report, thanks to positive contributions from these persons and support from the FAS Office, has been highly stimulating and it is our hope that our report can contribute to the further development of Swedish research into working life.

We wish to thank all those who contributed analyses of different aspects of Swedish and European research into working life, as well as those who contributed material on our Nordic neighbours. Finland: Tuomo Alasoni and Elise Ramstad, Tekes; Petteri Pietikäinen, Finland Academy; Ilkka Tahvanainen, Finnish Work Environment Fund. Norway: Soili Aintila, the Research Council of Norway (Norges forskningsråd); Robert Salomon, Work Research Institute WRI (Arbeidsforskningsinstituttet AFI). Denmark: Per Langå-Jensen, Technical University of Denmark, Torben Grønnebæk, Occupational Health Research Fund (Arbejdsmiljøforskningsfonden).

Thanks also to those who filled in the FAS questionnaire on research funding: Håkan Forsberg, Swedish ESF Council; Nils-Eric Tovesson, Development Council for the Government Sector (Partsrådet); Lise-Lotte Wallenius, Swedish Research Council; Ned Carter, Swedish Association of Local Authorities and Regions (SKL); Annika Zika-Viktorsson, Vinnova; Aila Määttä, AFA Insurance; Mats Rolén, Jubilee Fund of the Central Bank of Sweden (Riksbankens Jubileumsfond); Birger Eriksson, Social security fund for municipalities and county councils (Trygghetsfonden för kommuner och landsting); Anders Forslund, Institute for Labour Market Policy Evaluation (Institutet för arbetsmarknadspolitisk utvärdering IFAU); Bengt H Ohlsson, Formas; Lena Karlsson Engman, Swedish Defence Research Agency (Totalförsvarets forskningsinstitut FOI).

A draft of the report was circulated for comments to the following organisations: the Swedish Work Environment Authority (AV), Unionen (white collar union in Sweden), Alecta (Occupational pension company), The Swedish Confederation for Professional Employees (TCO), Vinnova, AFA Insurance, The Swedish Confederation of Professional Associations (Saco), The Swedish Trade Union Confederation (LO), Confederation of Swedish Enterprise and SKL.

Stockholm, 2 February 2009

Maria Albin

Gunn Johansson

Bengt Järholm

Eskil Wadensjö

Summary

Working life research studies issues which are of the highest relevance for society. It is very important that the research maintains high quality. Swedish research into working life maintains a good or very good scientific standard, and this has been the case at least for a couple of decades as a consequence of the major initiatives made throughout the years. Such research has resulted in changes in working life which have led to health and high productivity. The labour market partners have pointed out that this transfer is not working as well as before.

Reasons for carrying out research into working life include to identify risks and factors that promote health and well-being. Working life is of great importance for public health and welfare. A high labour force participation rate requires that people with functional disabilities, different illnesses and diminished capacity due to age can participate. High productivity is dependent on job satisfaction which gives people the opportunity to realise their full potential. Internationally, Sweden has a high level of health at work. Injuries in working life, despite the fact that many analyses indicate a decrease, are still of great importance and the total cost for society of injuries at work is estimated at SEK 50–100 billion in Sweden (2–4 percent of GDP). Working life research in Sweden can thus make a substantial contribution to society.

Financing for the sector over the last seven years has varied widely. Total resources for research into the area have decreased substantially in recent years. The largest change is the reduction in the extensive resources that the National Institute for Working Life had at its disposal. It is not yet possible to determine the final effects of this reduction since many researchers from the Institute are guaranteed salaries for another year. Universities are not able to reorient their priorities and take overall responsibility for research into working life given their current commitments. A review of university strategies indicates that working life research cannot anticipate any substantial resource supplements via the universities' ordinary appropriations over the next few years.

The other Nordic countries and many European countries have institutes for research into working life and specific research funding for the sector. Finland has increased its funding to working life research in recent years. A number of sectors of society need the knowledge generated by research into working life, but in Sweden there are no specific “centres” to turn to. Work environment research is closely related to occupational/labour medical units/clinics at universities/regional hospitals, whilst labour market policy research is carried out in IFAU, which however is not exclusively a research institute. Research on work organisation lacks instances for companies, authorities, trade unions to consult.

The focus of current Swedish research into working life should be continuously reviewed in relation to current and future working life issues and the special conditions existing in Sweden. From different national and international policy and societal bodies, emphasis today is put on some special aspects of working life of importance for the future *orientation of research*:

- the importance of working life for health equity
- linkages between economic growth and a good work environment
- research that enables as many people as possible to take part in working life
- the role of occupational health services, in particular to facilitate a return to work after sickness and prevent long-term sickness absenteeism

Earlier evaluations emphasise that:

- occupational health research should give priority to research concerning exposure/ risk models, interventions and implementation. It is emphasised that funding strategies should encourage interdisciplinary research projects
- labour law research lacks resources for covering essential areas

These recommendations are still considered to be valid.

Research which uses and develops the *high-quality registers* existing in Sweden should be stimulated.

In a situation where Sweden lacks a general institute for research into working life, transparency, dissemination of knowledge and dialogue could be strengthened by creating one or more platforms at one or more universities, backed up by virtual solutions. Such initiatives can also provide career opportunities for occupational health researchers, and facilitate partnerships in Sweden for international research.

The review shows that it is difficult to gain an overall view of current research on working life. *Good statistics on research into working life*, their scope and focus in combination with descriptions of working life are needed to assess whether more research is needed in certain areas.

The analysis shows in particular that in the area of occupational health, the number of active researchers decreased substantially after year 2000. Funding mechanisms should be designed so that they *support career development of competent researchers* in order to guarantee sustainability in their research areas. Such activities could include sabbatical leave spent at other research institutes, international research cooperation and individual competence development. Support for postdoc services would also fulfil such a function.

In the long-term our view is that FAS with respect to types of funding should:

- Consider how funds are allocated between different research areas in a situation where the number of active researchers in parts of the area of working life have decreased substantially.
- Consider what the best forms of grants are, given accelerating generational change.
- Consider how strong research environments of sufficient breadth are supported so that knowledge and the dissemination of knowledge needed in society is satisfied.

In the long-term our view is that FAS with respect to the focus of funding should:

- Make clear what new research areas are important in the longer term.
- Together with other research funders or in other ways create regular overviews of Swedish research into working life, particularly concerning its orientation.

1. Swedish working life

Current working life

The Swedish economy and its labour market has undergone developments which in many respects are similar to those in other economically developed countries. Change has gone from a large proportion employed in agriculture to a period with a large proportion of employees in industry, and subsequently to a majority working in the service sector. At the same time this development has meant a highly significant change in occupational composition and a change from many running their own businesses (in agriculture) to relatively few running their own businesses and now currently an increasing proportion doing this.

The composition of the labour force has changed in a number of respects. The average level of education has increased noticeably. Few persons are now leaving the education system immediately after completing compulsory school as was common earlier. This means that there are significant differences in the level of education between different age groups. As a rule younger persons are better educated than older ones, not only in Sweden but also in other countries. The explanation can be found both in changes in the demand for labour – employers increasingly demand labour with higher levels of education – and in changes in the supply of labour, which not only depends on the increasing demand for individuals with higher education. There are many persons with an education higher than that required for the work they are carrying out.

The number of years spent by men in working life has tended to decrease. Entry to the labour market now takes place at a higher age. This can be partially explained by extended education, but also by the fact that it takes longer to establish oneself on the labour market after completing education. There was for a long time a trend of increasingly early exit from working life. The real age of retirement has tended to decrease in Sweden and in other countries. This trend has now been broken both in Sweden and in many other countries. The age at which people retire is increasing. On the other hand, for women the number of years in working life has increased continuously and noticeably so in recent decades. Women no longer leave the labour market when they marry or have children. The differences between men's and women's relationship to working life have gradually decreased in most countries. Contributing to this trend (and partially explained by it) is the reduction in the number of children born per woman.

Working hours, whether measured weekly or annually, have decreased in most countries in recent decades. In countries such as Japan and the USA which have very long working weeks and short holidays, annual working hours have also decreased. This can be partially related to the fact that women, who nowadays make up a larger part of the labour force, and more often work part-time than men. But the fact that the average number of hours worked by men has also decreased contributes to this development.

Common to many countries in Europe is the fact that certain groups experience major difficulties either in establishing themselves or staying on the labour market. This applies not least to immigrants from countries outside Europe, as well as those with some form of functional disability. In particular persons with non-physical functional impairments face increasing problems on the labour market.

Does Sweden deviate in certain respects from this West European or generally western development on the labour market? A comparison shows that there are noticeable differences in some respects between different countries in Europe. What is typical for Sweden?

Sweden has a high degree of labour force participation and employment compared with most other comparable countries. This is due not only to the high proportion of women working in Sweden compared with other countries, but also to the fact that the real age of retirement is higher in Sweden than in most other countries in the OECD. On the other hand, the age of entry to working life is relatively high in Sweden, also given the length of education. Working hours per employee are also

relatively low compared to many other countries – the main explanation being that the proportion of part-time employees (mainly amongst women) is relatively high.

Women thus participate in working life to a higher degree in Sweden than in other countries. However, there is substantial occupational segregation and substantial salary differences between men and women in relation to education and number of years in working life.

Sweden has a highly organised labour market. This applies both to the employer side and not least the employee side. The vast majority of employees on the Swedish labour market are members of a trade union. Much of the regulation that exists on the Swedish labour market takes place not through laws but through collective agreements. A significant part of Swedish labour market legislation is applied by agreement – if the labour market partners are in agreement, their agreement applies and not a specific rule that is determined by laws. The high degree of organisation has a ubiquitous impact on the labour market. This has contributed, amongst other things, to relatively small salary differences in Sweden.

Collective agreements cover not only salaries but much else. The high degree of organisation means that income transfers regulated by agreements are of great importance in Sweden. They complement the social insurances and replace in some cases social insurances existing in other countries. The players on the labour market are carrying out what could be described as active labour market policy measures through joint bodies (Social Security funds etc.). It is difficult to understand the Swedish labour market without taking into account collective agreements.

In all countries there is some form of labour market legislation. It may be more or less comprehensive. Sweden's labour legislation from a European perspective occupies an intermediate position. There are also countries which have more substantial regulation (such as South European countries) as well as those that have less extensive regulation (Denmark and the UK).

Traditionally Sweden has emphasised active as opposed to passive labour market policy – the work approach as opposed to the cash support approach. A European comparison shows that Sweden is a relatively large investor in active measures. In particular this applies to persons with functional disabilities (employment with wage subsidies, “Samhall” etc). In Sweden active labour market programs are to a greater extent open to the elderly than is the case in other countries. In many other countries, in practice the available option for the elderly is to receive cash support.

Studies in the EU indicate that those working in small companies, the elderly, young people, immigrants and those with temporary employment run a greater risk of being affected by work-related accidents. Amongst men in Sweden, the youngest face the highest risk of accidents, whilst the pattern for women is the same as in the EU. Compared with many other European countries, Sweden has a large proportion of employees in large companies, few young people work and temporary work is relatively little compared to many other countries. However, relatively many of the elderly work, and immigrants represent a larger proportion of the population in Sweden than in most other European countries. This indicates that there are two relatively large groups, immigrants and the elderly, who face a higher risk of work-related injuries in Sweden.

An international comparison showed that conditions on the Swedish labour market differ from those in many other countries, including member states within the EU. In recent years and particularly after the change of Government in 2006, questions on unemployment, long-term sickness and exclusion have been the subject of much discussion. The discussion has also covered conceptual and methodological problems concerning measurement of exclusion. Another current discussion concerns the unemployment benefit fund and compensation levels, and also declining trade union membership. Labour legislation issues have been much publicised particularly as regards the Laval Case and the investigation into the interpretation of the judgement in the Commission of enquiry carried out by Mr. Claes Stråth. In recent times the impact of the international financial crisis on the Swedish economy and the labour market has been in focus. Declining demand both internationally and in Sweden probably has a major impact on the Swedish labour market, employment and lay-offs. The new situation also imposes major requirements on research into working life.

The future of working life

The view below is based on a projection of trends. A change in trends is more difficult to forecast.

Globalisation and deregulation lead to an intensification of competition and a requirement for substantially increased flexibility in how work is organised. New demands can be partially satisfied by using increasingly advanced information and communications technologies. This results in new needs for organisational change and educational initiatives. The demand for goods and services is varying increasingly rapidly and the labour force, premises and equipment must be adjusted accordingly. Excessively rigid organisational structures must be avoided, and much work tends to be carried out in project form. One way of managing rapidly changing production requirements would be to temporarily recruit personnel from temporary work agencies. Such a form of employment can be chosen by groups who want change and challenges, for others it could function as a “stop gap” between employment or for certain groups it could serve as a point of entry to the labour market.

The composition of work groups tends to be based on a mix of competences considered to be appropriate for the given situation, rather than membership of a specific organisational unit. More and more companies are becoming active on the international market, often with production units and employees located in different countries and continents. Requirements will thus be imposed that management and leadership also function via distance, and here there is scope for research and development. Efficient production of goods and services requires in many areas the application of management by goals rather than through rules. This leads to placing greater responsibility on intermediate managers and individual employees in interpreting generally formulated business goals in relation to their own daily work tasks and how these are to be carried out. Such strategies and steering mechanisms will probably need to be further developed, for example to provide better guidance to co-workers in determining priorities in their work than we have hitherto seen. Experimenting with organisational forms similar to the engineering industry during the 1970s and 1980s can be anticipated, not least in connection to the initiatives now planned for innovation and development in technology and medicine. Research on organisational forms will be important in connection with the design, implementation and evaluation of these changes.

Information and communications technologies have already made possible the dissolution of the temporal and spatial boundaries of work. Increasingly work e.g. in the service sector will be partially or completely distance mediated, and the possibility of working from home creates new ways of organising work over the whole day and week. Many parents are already adapting their working hours to when their children are in school and at day care centres. The difficulties identified over striking a good balance between a mobile demanding working life and other life roles, for instance as parents, as children of ageing parents and as involved citizens of society, will probably also in the future need to be examined through scientific methods, not least from a gender perspective.

Time restrictions brought about by the 24 hour society in the global economy will also be eliminated. Running global activities requires manning 24 hours a day. Together with raised demands for service outside normal hours, development is moving in the direction of more vocational groups than before working during inconvenient or odd working hours. This in its turn has consequences both on how work settings should be organised and how work itself should be organised.

The many organisational patterns and structures which now and in the future are and will be undergoing rapid change have aroused attention from working life research. With welfare, health and growth as goals for societal development, further measures will be needed based on scientific knowledge.

There are arguments for assuming that current change towards increased employment in the service sector will continue. This development can be accelerated by the current economic crisis which mainly affects manufacturing and construction industries. Such changes will also lead to a continuation of the restructuring of the professional/ vocational mix. It is also possible that development towards more people running their own businesses and smaller workplaces on average will continue.

Average annual working hours have been stable over the last decade for men, but have been increasing for women. There are no strong arguments to suggest that this change will come to a halt

over the next few years. There is also reason to believe that the change towards higher real retirement ages which we have witnessed over the last decade will continue in the future. This will impose demands on how workplaces are organised.

Undoubtedly the requirement that the business sector and public organisations be sufficiently flexible to adapt to the surrounding world will lead to greater mobility on the labour market. This means individuals, organisations and society must maintain a permanent preparedness for responding to change.

The Swedish model with its strong emphasis on a high degree of organisation, collective agreements and relatively small emphasis on labour market legislation can be expected to survive albeit with adjustments necessitated by membership of the EU. There is strong political support for the model, not least from the players on the labour market even though the two sides on the labour market have split views. Currently there are no trends towards greater regulation of the labour market through legislation.

Labour force participation of women and men is becoming increasingly similar and differences in the average number of hours worked are decreasing. Gender segregation on the labour market is decreasing only slowly, and seems to continue to be substantial over the next few decades. Gender salary differences appear to be stable. One interesting question is what differences in levels of education will mean. If we look back several decades, on average men had longer education than women. Now the relationship is the opposite even though differences are still relatively small. Women, however, proceed to higher education to a much larger extent than men. This means that on average women will gradually receive longer education compared to men. In addition, there are significantly more men than women with shorter education.

The proportion of immigrants on the labour market tends to increase as does the proportion born in Sweden but with parents born abroad. Immigration of refugees and their relatives has dominated in recent years. The enlargement of the EU in 2004 and 2007 has led to an increase in labour immigration. This may increase further as a result of the greater opportunities for labour migration from countries outside the EU introduced on 15 December 2008 as a result of a decision in the Riksdag.

It should be noted that a substantial proportion of immigrants are refugees coming to Sweden after difficult and traumatic experiences. They cannot be expected to enter the labour market quickly. So long as immigration involves these elements, special rehabilitation programs will be required.

Working life for demographic and vulnerable groups

Different individuals meet different situations on the labour market, and the conditions for getting and managing different kinds of work differ between individuals due to differences in health and education. The individual is received in different ways on the labour market depending on such characteristics as gender, ethnicity (country of birth), age and functional impairment. Much of the research into working life is directed to differences between different groups. Here we will briefly mention some of the differences between different groups.

Nearly the same proportion of women as men are active in working life. Distribution in terms of unemployment is approximately the same. On the other hand there are significant differences in other respects. Women more often work part-time than men and to a lesser extent run their own businesses. There is also substantial gender-based segregation on the Swedish labour market. More women than men are employed in the public sector, and they often work in schools, health care and care of the elderly, whilst men more often work in manufacturing and construction industries. Gender segregation on the Swedish labour market is decreasing albeit slowly. The major differences in the distribution of occupations in industries also leads to large differences in the working environment. Women are affected, e.g. more often by occupational diseases and men more often by occupational accidents. It is also worth noting that women have lower salaries than men in working life, even when education and number of years are taken into account.

An increasing proportion of the population in Sweden was born abroad, or have parents born abroad. There are major differences in the labour market situation between those born in Sweden and immigrants. The degree of employment is significantly lower amongst immigrants, and there are major differences in distribution between industries and occupations with respect to immigrants and those born in Sweden. This means that there are also major differences in the work environment. Salaries are also as a rule lower for immigrants than for those born in Sweden even when education and working life experience are taken into account. It is important to point out that there are major differences between the overall situation for different groups of immigrants. Those who come from countries in the Nordic area and Western Europe have in certain respects a significantly better situation than those coming as refugees or as relatives of immigrants who have already arrived. Those who have the most vulnerable situation are those working without a residence permit. We have very little information about this group as is also true of those who are working but who are not officially registered. There are reasons to believe that the working environment is particularly problematic for both these groups.

Those who have functional disabilities with reduced work capacity often face a difficult situation on the labour market. Even though the rate of employment is higher in this group in Sweden than in other countries, it is still low. In many cases the work they have is less stimulating than other work. The differences in the scope for finding a job are large and vary in relation to the type of functional disability. Those with reduced capacity which is not of a physical nature face the greatest problems.

There are large differences between different age groups on the Swedish labour market. The groups of most interest to researchers are the young and the elderly. Many young people experience difficulties in entering the labour market. In times of economic crisis such as the present one, it is difficult to enter the labour market for the first time. There are large differences regionally and by education and country of birth. A long period of unemployment at the start of working life can lead to later problems. Young people who obtain a job have a higher risk of work-related injuries – it is easy for those new to working life to make mistakes resulting in injuries.

There is a political desire in Sweden to raise the exit age from working life. Changes in the pension system have been implemented in Sweden and other countries for this very purpose. This leads to lower costs and higher tax revenues for the public sector. It is very positive for many people to be able to continue working, not just for financial reasons. For others, this may put additional pressure on health. The differences are large when making comparisons between groups with different education and professions. Older employees and the young are more often affected by work-related injuries than those who are in intermediate age groups. How work is organised and carried out is often not adapted to the conditions appropriate for older employees.

Consequences for individuals and groups at work

Working life characterised by mobility and with high requirements for flexibility has substantial consequences on individuals and groups. It leads to an increase in time-limited employment and employment with frequent changes between workplaces, which can lead to greater insecurity for the individual. Requirements to be prepared for shifts and changes in vocational paths and careers are increasing. But assuming that this is self-initiated, there may well also be positive development opportunities in the changes.

Social grouping in this new mobility tends to become briefer, and individuals and groups are expected more often than before to establish themselves in new social networks. We need to identify how much social reorientation is optimal for the individual, and how the reorientation can be facilitated and supported.

A mobile working life requires individuals to change employment and workplace numerous occasions over the course of their professional life. High expectations will be imposed on such transitions to take place rapidly and smoothly, and that individuals and vacant jobs are matched in a way that is favourable for both sides.

Health at work

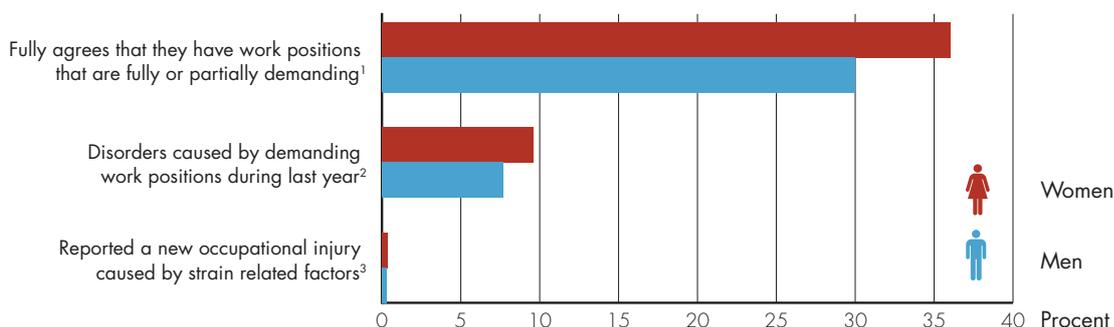
Work gives people resources, economic as well as social through membership of a community, self-esteem and job satisfaction, all of which have a positive impact on health. Work can also lead to the risk of injury.

The term “health at work”, or occupational health, is seldom used in Sweden. However health at work is often described in terms of work-related injuries, difficulties etc. and there are significantly more comprehensive statistics concerning ill-health. Working life also contributes to health, but the relationship may often be more difficult to describe in simple terms, and other factors related to working life make it more difficult to analyse. It is well-known that high-ranking white collar workers have better “health” than blue collar workers and that within the group of white collar workers, health/ill-health is related to level, that is the higher the position the better the health. The extent to which differences in health are affected by factors in working life has been less researched, i.e. would it be possible to influence work organisation or other conditions at work in order to decrease these differences in health? Since public health can be affected by lifestyle factors, the same factors or similar factors could be changed in working life, e.g. at a time when it is considered important that we are physically active, how work is organised could increase or decrease this. Below health at work is described in the first instance from the view of “ill-health”, but it is evident that the “degree” of ill-health is largely related to what one is studying.

“Health at Work” in Sweden is good in comparison to other countries in Europe, e.g. fatal accidents at work are less common in Sweden (Occupational injuries 2007, preliminary figures, AV 2008). At the same time health varies widely in Sweden, due to work conditions and is highly dependent on the factors that are actually being measured.

Figure 1 shows the relationship between health and physical strain. If the number of reported work injuries in this category over a year are measured, about 0.3 percent of the working population are affected (around 14 000 persons). If instead disorders arising from physically demanding work over the last year are measured, slightly less than 10 per cent report such complaints (about 400 000 persons). If we measure how many persons have physically demanding work, 30–35 per cent report this (about 1.3 million persons).

Figure 1. The proportion of the population in Sweden that is working in physically demanding work positions, is adversely affected by these conditions, and reports their strain disorders as occupational injuries (2005, 2006).



¹Work environment survey 2005 (Arbetsmiljöundersökningen 2005)

²Disorders caused by work 2006 (Arbetsorsakade besvär 2006)

³ISA 2006 (Informationssystemet om arbetsskador)

Source: Arbetsmiljöverket (The Swedish Work Environment Authority): Statistics on strain ergonomics (Statistik om belastningsergonomi) Report 2007:6

Figure 2. Length of working life and female occupations.

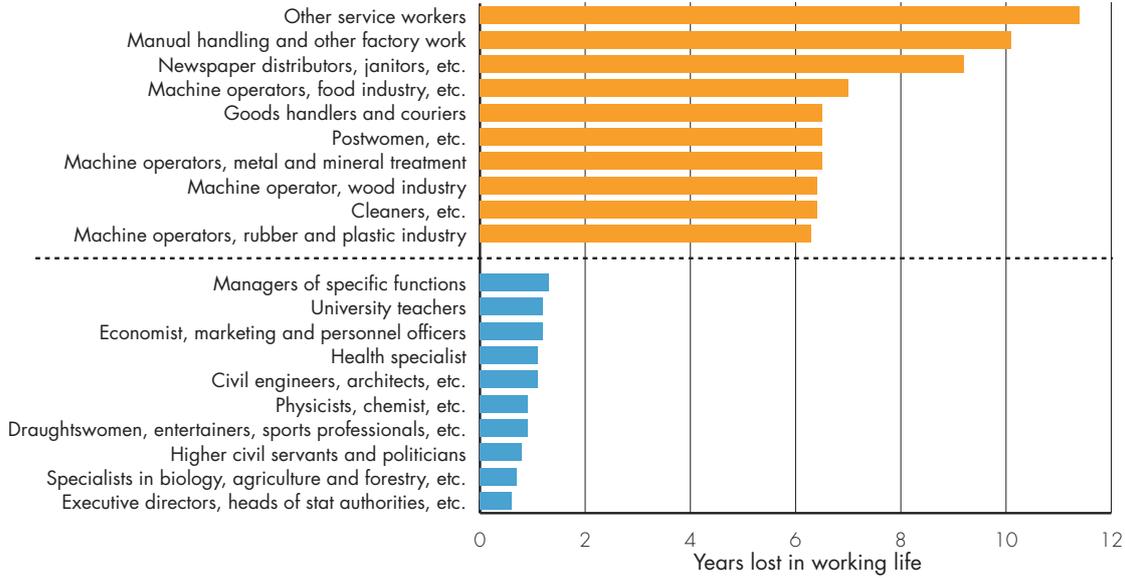
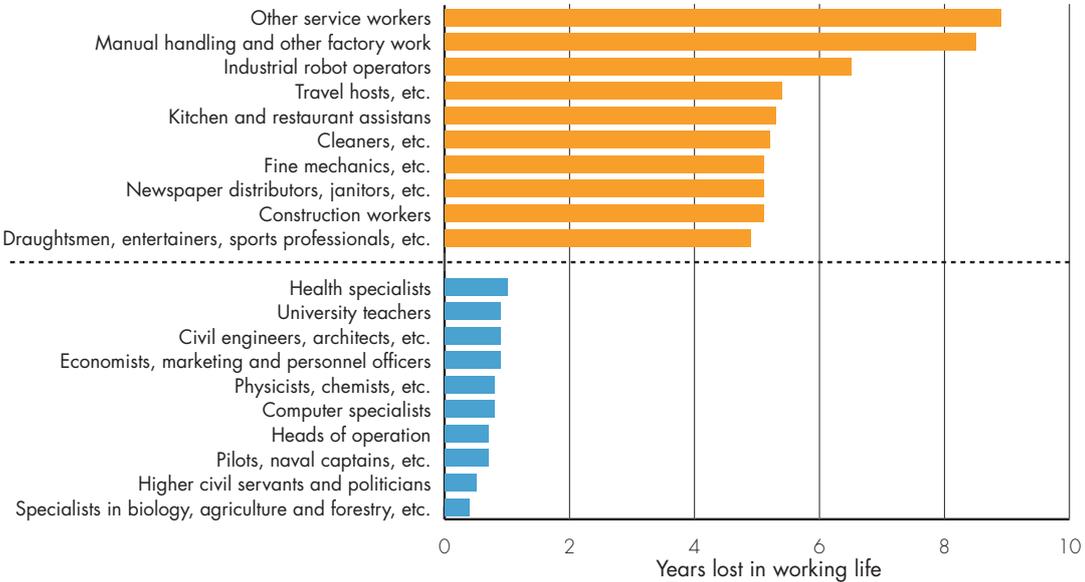


Figure 3. Length of working life and male occupations.



Another way of describing variation in demands at work and the importance of work for health is to compare “lost working years”. This means measuring how long a person is expected to remain in working life if he or she has a specific occupation, and relating this to work up to the age of 65. Figures 2 and 3 show “lost working years” of 35-year-olds by occupation. The differences in lost working years reflect deaths, early retirement as well as long-term sickness up to the age of 65. As is evident from the figures, some higher civil servants and politicians lose about a year, whilst persons in some service occupations and industry work lose between 5–10 years. Women on average lose somewhat more than men. These differences show not only the “risks” in working life, but also a selection of persons to different occupations.

Sweden has good access to statistics compared with many other countries. Reports are regularly compiled based on reported work injuries and interview questionnaires on a random sample of the population. However, there are difficulties in comparing statistics between different countries. The easiest figures to compare between countries are fatal accidents which are usually reported in similar ways. In Sweden the number of fatal accidents has decreased substantially since the 1950s, but this trend has flattened out and increased somewhat, see Figure 4. Compared with the EU countries (Figure 5) the differences between Sweden and other EU countries (EU-15) have decreased, whilst the frequency in other countries is decreasing, the opposite holds true in Sweden. Traffic accidents are excluded in the comparison since traffic accidents at work are not included in all the countries' work-related injury statistics.

Statistics Sweden (SCB) and The Swedish Work Environment Authority (AV) regularly collect data from individual reports on self-reported conditions in working life. The data should be interpreted with caution since the trends may be related to actual changes, and changes in the propensity to report. (AV 2007 and 2008). Compared with 2005, more persons report in 2007 that they have obtained meaningful work and more influence at work. Pain in shoulders and arms is less common and fewer feel physically exhausted after work. It was reported that they have more to do and are more often forced to take work home or work late. Access to occupational health services is also reported to have increased somewhat. Viewed over a longer time period, noise, heavy lifting and violence or threats of violence are factors which are reported quite often. Over the time period 1989–2007, changes in reporting frequency are relatively small. Violence and threats of violence are reported somewhat more often, whilst reporting of heavy lifting has decreased.

In 2008, 24 percent of women and 19 percent of men reported that they had experienced disorders over the last year due to work (Arbetsorsakade besvär 2008, AV). Of these, slightly less than 3 percent of work-related injuries or accidents take place when travelling to and from work. 7 percent reported that disorders led to sickness absenteeism. This means that a total of slightly more than 300 000 persons were on sick leave last year due to disorders which they considered related to work, and of these about 150 000 have been away for at least five weeks. 15 percent of those reporting complaints stated that they reported the disorder as a work-related injury. Physical strain and stress are factors most often cited as a cause of disorders. Over time the proportion reporting disorders has decreased since the beginning of year 2000, Figure 6.

In its public health report of 2005, The National Swedish Board of Health and Welfare (Socialstyrelsen) points out that measurable psychological ill-health has increased since the 1980s. The increase in psychological disorders is mainly found in two groups.

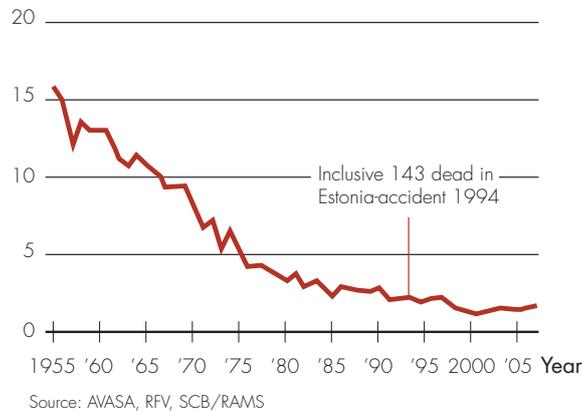
- One group where these disorders are strongly related to physical diseases, in many cases pain; these problems can probably be related to working life.
- One group where other living conditions probably play a larger role; these differences can primarily be related to young people.

The conclusions of the report are that issues concerning working life, including the labour market, play an important role in the increase in psychological ill-health amongst young people:

The difficulties young people face when entering the life of society, with work and starting a family as well as a more demanding working life, appear to play a large role in the increase of

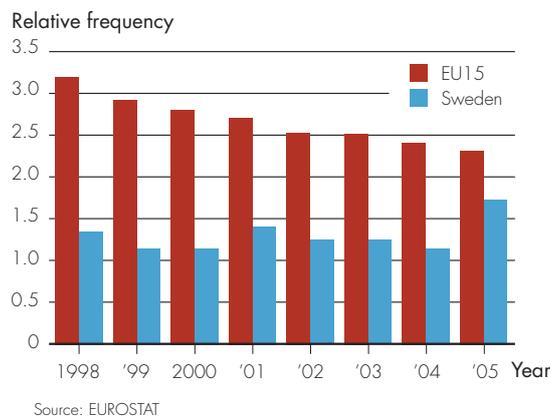
psychological and psychosomatic problems observed over the last 10 years. (Socialstyrelsen, 2005).

Figure 4. Number of fatal occupational accidents in Sweden per 100 000 employees 1955–2007.



Source: The Arbetsmiljöverket (The Swedish Work Environment Authority): Arbetssskador 2007, preliminära uppgifter (Work-related injuries 2007, preliminary data), 2008

Figure 5. Occupational fatal accidents per 100 000 employees 1998–2005 excluding traffic accidents in the EU (15 countries)/ Sweden. Nine common industries.



Source: Arbetsmiljöverket (The Swedish Work Environment Authority): Arbetssskador 2007(EUROSTAT). (Work-related injuries 2007 [EUROSTAT], preliminary data), 2008

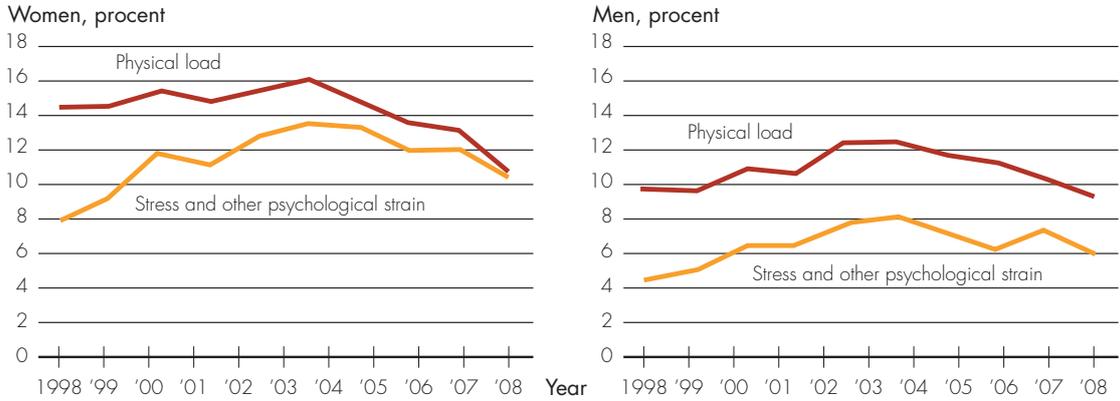
By different measures (technological changes, improved work routines, elimination of certain substances, improved controls etc.) many classical occupational diseases have decreased. Silicosis which in the 1970s still caused 30–50 deaths per year affects on average only a few individuals per year and then often in a mild form. Injuries to the central nervous system from organic solvents, which in the 1980s was fairly common are now much rarer. The Cancer Committee estimated in the 1980s that about 2 percent of all cancer originated from working life. The use of many known carcinogenic substances has been reduced (asbestos, quartz, coal-tar), at the same time as many new substances are starting to be used and the risks of using these are significantly less well-known. It can be estimated that the number of substances handled in working life range between 50 000 and 100 000. For less than 1 percent of these, there are hygienic threshold values or a clear understanding of possible cancer risks. Respiratory diseases are relatively common in the population. It can be expected that about 5 percent of the working population has asthma. Chronic obstructive pulmonary disease (COPD) in

persons over 45 affect approximately the same proportion of the population (5–10 percent) and are strongly correlated to smoking habits. More recent studies indicate that 10–20 percent of all new cases of COPD and asthma in adults are based on different degrees of exposure in working life. In addition, it can be expected that people with asthma and COPD are also affected by other factors in working life. For example, it may be difficult to work in environments with a high occurrence of air pollution for a person with asthma and allergies to cats. A Finnish study estimated that 4 percent of fatalities were due to work environment factors, mainly dust, smoke and chemicals (Nurminen, Karjalainen, 2001). Applied to Swedish conditions, this would imply thousands of deaths annually.

When assessing work-related injuries, the discussion mainly focuses on the question of sicknesses caused by the working environment. During 2007 a total of 2 700 cases were approved by the Swedish Social Insurance Agency. However, this provides a limited view of the problem. Legislation imposes quite high requirements on causal relationships, which is why it can be expected that cases where working conditions play a less important role are not approved. In areas where there is a lack of knowledge, injuries cannot be approved. But certain diseases with well-established causal relationships, such as e.g. mesothelioma which in about 80 percent of cases is caused by earlier exposure to asbestos, are fairly seldom reported (Andersson, Torén, 1995). One estimate from the EU makes it clear that work related injuries cost society between 2.6 and 3.8 percent of GDP, which for Sweden would correspond to about SEK 100 billion (European Commission, 2007 [2]). This type of estimate is uncertain, but indicates that injuries related to work apart from human suffering are the cause of significant economic loss.

Deficiencies and demands in the working environment can limit the possibility for people with different kinds of sicknesses (irrespective of their cause) to work. Some examples: People with moderate psychological disorders or handicaps may experience difficulties in working in certain types of environment, for instance in a highly mobile social environments with high staff turnover, or one where there is a high degree of customer contact. People with sicknesses affecting body movement may experience difficulties at work involving heavy lifting, low controls or limited and repeated movements. People with respiratory diseases find it difficult to work in environments that have high levels of pollution. Changes in the working population in relation to conditions at the workplace should thus be taken into account. An increasing proportion of young people have allergies or a propensity to develop allergies. This makes them vulnerable to environments with polluted air and where skin is exposed to much water or dehydrating substances. The population and labour force are also becoming older. The occurrence of disorders related to movement are closely linked to age.

Figure 6. Women and men with disorders due to physical load or due to stress and other psychological strain 1998–2008.



Source: SCB (Statistics Sweden), Arbetsmiljöverket (The Swedish Work Environment Authority): Arbetsorsakade besvär 2008 (Disorders caused by work 2008).

2. What is research into working life?

Research on working life that aims to explain, understand and influence working life is a crucial part of society and people's lives. Vital research into working life can thus contribute in different ways to the positive development of society and a good life for people. Internationally, Sweden has over the years had a successful track record of research into working life.

FAS categorisation of working life research:

Work and health

This area covers occupational health research as well as issues concerning mental, physical, chemical and biological risks in the working environment. Research can also identify how the working environment can best be organised to promote individual health, safety and development.

Studies of how conditions for individuals and business operations are connected to each other are also included. Research on the preconditions for intervention, implementation and development of methods for favourable work environments are of relevance.

The interaction between physical and psychosocial working environments and conditions of employment are included in the area as is the impact of background factors such as socio-economic conditions, incidence of sickness, ageing, gender and ethnicity.

In addition, the importance of the working environment includes to reduce exclusion and increase individual participation in working life.

Work organisation

This area concerns research into the theory of organisations and how interaction between the individual and the organisation changes as a result of new technology, and new and more interactive forms of working, through changes in types of employment and greater focus on customers.

Today's working life leads to more flexible organisational forms, which can create opportunities and risks both for the activities and co-workers. The role of leadership in steering operations, adding value and creating good working conditions is relevant. This includes the role of co-workers and the interaction between competence, learning and occupational roles, changes in technology, working conditions and the organisation of production.

In addition, questions arise about influence and control at work as well as gender and power relations at the workplace, such as discrimination, mobbing and exclusion, based on factors such as gender, age, ethnicity, functional disabilities and sexual orientation.

Labour market

This area covers the functioning and regulation of the labour market. With increasing internationalisation, the following become important issues: the mobility of the labour force, the common European labour market and the effects of globalisation, migration and discrimination.

The area also covers research on labour market relations, labour law and studies of the role of EU legislation and how the Swedish model for developing working life and society is affected by external factors.

Research into matching between education and work, about over/under qualifications, as well as salary creation are part of the area, as are obstacles to entry on the labour market. Research on unemployment, capacity to work as well as methods for breaking down social exclusion are also part of the area. In addition, studies cover segregation in working life, professionalization, how occupations and professions are defined, developed and change, and how new qualification requirements materialise.

There is no generally established definition of what constitutes research on working life². In some cases research into the working environment and working life are used synonymously. FAS uses the term “Work and health” essentially as synonymous with occupational health research (see text box at page 18).

The research can also be divided into different science areas, where above all technical, natural science and medical research study issues concerning the working environment, whilst economic research has largely focused on studies of the labour market. Behavioural and social science research into working life in this division mainly come under the heading of work organisation, often with a focus on health (closely related to biomedicine), on competence development, creative environments and innovation, and on the interaction between people and machines (related area to technology/ergonomics).

Research on working life can contain clear elements of basic research, e.g. toxicological research on different chemicals in working life as well as a high degree of applied research, such as the design of different types of protective equipment or action research in certain companies. Working life research can incorporate an important element of certain science areas e.g. labour market research in economics, recruitment and selection in psychology, whilst occupational health research is a small area in the field of medical research.

The Government research and innovation bill divided research on working life into the following areas:

- working environment
- work organisation
- labour market including labour law

In this document, we take the same approach.

FAS with a number of others has in recent years evaluated parts of Swedish research into working life. The task of our investigation was to

- summarise and update these evaluations,
- give an overall view of different sources of financing,
- identify areas which will require special measures in the future,
- give ideas on how an overall view, dissemination of knowledge and dialogue can be strengthened since the research is mainly carried out in universities and university colleges
- consider how the generational shift and gender equality can be promoted

The importance of research into working life

The labour market and working life over the last few decades have undergone comprehensive changes as a result of the global economy, deregulation and rapid technological development. A period which is characterised by extensive structural change, major changes in industry, generational changes and heterogeneous composition of the labour force, will require both the application of existing knowledge and ongoing updating of the working life related scientific knowledge which can contribute to sustainable societal development. Changing conditions lead to new questions for research and development, questions which cannot necessarily be answered on the basis of existing knowledge, for instance, does a more mobile labour market require the development of methods that can be used to match individual/groups and job vacancies with each other.

At the same time as it is important to ensure good health at work, active build-up of knowledge is important for promoting competitiveness and the long-term sustainability of private and public sectors. It becomes increasingly important to be able to base all kinds of core development of operations, public and private, on knowledge of individuals, groups and organisations and their interaction, in order to strengthen motivation to work, meaningfulness at work and involvement.

²The Swedish Institute for Working Life at its closure was organised into thematic areas such as working life issues within the school.

Today certain aspects are emphasised, nationally, at the European level, and internationally that are important in shaping research into working life.

The Swedish Government states in the bill on research and innovation for 2009–2012 (2008/09:50) the following:

In order to reduce exclusion and increase welfare in society, the development of new knowledge is important. Labour market research is needed in order to obtain knowledge about how policy reforms affect the performance of the labour market and how different groups are affected by structural change. To support increasing participation on the labour market, knowledge is also required of how conditions and incentives can be best organised. The working environment is important not least because it has an impact on the individual's opportunities for participating in the labour market. Development of knowledge in areas of importance for individual health and safety are important, but further knowledge is also needed in areas concerning the linkage between the development of individuals and business activities.

The bill also puts emphasis on the importance of research into occupational health services:

There is a close relationship between occupational health services and work carried out to reduce sickness absenteeism and to support the return to work. Together with an expansion of the health-care mission and evidence-based rehabilitation, the effectiveness of preventative work could be increased. Knowledge of effective methods and work processes, the benefits of occupational health services in different respects thus need to be made more concrete, systematised and deepened.

The Confederation of Swedish Enterprise, The Swedish Trade Union Confederation (LO) and The Council for Negotiation and Co-operation (PTK), submitted in October 2007 their views to the Minister of Research, Mr. Lars Leijonborg, on Swedish research into the working environment. It was also pointed out i.a. that:

The research carried out should be basic research, intervention studies and measures aimed at transforming research findings into practical applications. This presupposes high quality statistics in the working environment area.

The research should also have a direct linkage to education in the working environment area. e.g. in occupational medicine, ergonomics, psychosocial, chemical and physical questions and occupational health care services. Future financing strategies should also make possible and stimulate interdisciplinary research projects.

The document also pointed out the importance of research in the broader concept of “research into working life”:

Research into the role and participation of different actors in the creation a good work environment is crucial. Also crucial is that research carried out around the question which working conditions, e.g. psychological and social relationships, leadership, work organisation etc, that create the conditions for sustainable health at work and good results at work.

The Swedish Trade Union Confederation (LO), the Swedish Confederation for Professional Employees (TCO) and The Swedish Confederation of Professional Associations (SACO) stated the following in a written communication in June 2008 to then Minister of Research, Mr. Lars Leijonborg about the organisation of Swedish research into working life:

Total funds for research on working life need to be substantially increased in volume. The largest need for funds exists in the areas of health at work and work organisation.

At the EU level there are a number of policy strategies for improving working life. One of these is the EU's social agenda, but possibly the most important is the Lisbon Strategy (EU, 2007). The four pillars of the Renewed Lisbon Strategy (2008-2010) are:

1. Investing in people and modernising labour markets
2. Company climate
3. The level of knowledge (education, R&D, innovation)
4. Energy issues and climate change

In addition, the joint strategy for health and safety at work for 2007–2012 (European Commission, 2007) attached importance to R&D that can improve health and safety at work.

Both basic research as well as applied research are of vital importance in improving knowledge of the working environment area, for describing exposure scenarios, mapping causes and consequences, and for the development of prevention methods and innovative technologies. Research supplies the arguments and evidence on which policy decisions should be based.

In a resolution from the European Commission (25 June 2007) on the recently mentioned work environment strategy, the following linkages between good working environment and the Lisbon strategy were identified:

Work quality has a significant human, and economic dimension, and member states by adopting the Lisbon strategy have agreed that work environment policy makes an important contribution to economic growth and employment.

The World Health Organisation (WHO) also wishes to promote research into better health in working life. In 2008, the WHO *Commission for Social Determinants of Health*³ put forward a program for influencing the social factors determining health. A special section concerns the crucial importance of working life on health, and particularly on gender equality in health (WHO, 2008):

Employment and working conditions have a major impact on health and equality of health. When these are good, they can contribute to economic security, social status, personal development, social relations and self-esteem, as well as provide protection against physical and psychosocial risks – all of importance for health. Apart from the direct health consequences of combating work-related inequality, the effects of inequality in health become still greater given the importance of work in reducing inequality related to gender, ethnicity, race and other social inequalities.

The International Labour Organisations' (ILO) global work environment strategy (ILO, 2003) indicates the importance of systematising and identifying new work-related risks to health. In addition, the ILO Convention 187, which was ratified by Sweden in July 2007, takes up the importance of research:

The National work environment system should contain, where appropriate, the following: (- - -)
(e) research into risks and safety at work (f) a system for collecting and analysing data on work-related accidents and sicknesses which takes into account the relevant ILO conventions and recommendations.

When the Secretary-General of the OECD, Angel Gurría, visited the ILO on 17 November 2008, he highlighted in his speech the current economic crisis and the great importance of working life on people's health and welfare:

The crisis has made the work of our two organisations on the labour market and social policy still more important. Successes or setbacks in this work will not only have an impact on the survival of millions of people around the world, but also on the kind of global financial and economic architecture citizens wish to see after the crisis. Globalisation that favours everyone only functions if the social dimension is brought in.

³ The Commission was formed in 2005 and had the task of demonstrating the opportunities for achieving gender equality in health and working for its global mobilisation.

3. Working life research in Europe

Research on working life is partially funded by players at the European level. European bodies also identify certain areas considered to be of importance for research. This applies e.g. to the Seventh Framework Program for Research and Development of the European Commission, the European Agency for Safety and Health in Bilbao, the European Foundation for the Improvement of Living and Working Conditions (Eurofound), the European Training Foundation (ETF) and also the European social partners.

In 2007, NEW OSH ERA (<http://www.newoshera.eu/en>), an EU funded “ERA-NET project”, defined five areas as particularly important for future national research. The prioritised areas were identified by studying what research areas should be given priority by member organisations, as well as by the governments of member states (NEW OSH ERA, 2007):

- Working environments which reduce the incidence of psychosocial problems
- Psychosocial risks related to organisational changes
- Simultaneous exposure to more risk factors in the working environment such as physical, chemical, psychosocial, biological and ergonomic
- Changes in work and employment conditions
- Improvements in “management systems” and safety culture

NEW OSH ERA furthermore pointed out that research resources in the following three areas should be “pooled” between countries:

- Safety and health effects of manufactured nanoparticles and ultrafine particles
- Specific health problems caused by dangerous substances, in particular work-related cancer, cardiovascular diseases and effects on reproductive health
- Simultaneous exposure to multiple risk factors in the working environment such as physical, chemical, psychosocial, biological and ergonomic factors

WORK-IN-NET, another ERA-NET project (<http://www.workinnet.org>) with a focus on innovation and work organisation, considers that the focus should be put on three main themes if Europe is to successfully face future challenges in innovation, productivity and the labour market:

- Qualitative management for heads and personnel
- Companies' social responsibility and culture
- Regional development alliances

The possibility of receiving economic support at the European level for research on conditions in working life has decreased in a comparison between the different framework programmes. In the current Seventh Framework Program, there are certain areas where work life research is mentioned, but emphasis is put more on research into social conditions in society as a whole and on labour market research. In the area of occupational health, support is mainly network mediated in the ERA networks. Sweden participates in two work-related ERA networks, NEW OSH ERA on occupational health research (FAS and AFA Insurance) and WORK-IN-NET on work-related innovation research (Vinnova and FAS). During 2009 there were project calls within the framework of both networks. The call from NEW OSH ERA deals with psychosocial stress. From WORK-IN-NET the call deals with research on work organisation that promotes innovation and growth.

In the current four-year programme of the European Foundation for the Improvement of Living and Working Conditions (Eurofound) a shift in research investments has taken place from the working life and occupational health area to macroeconomic questions, such as employment and structural change, and also to questions concerning the impact of social dialogue/industrial relations. PEROSH (<http://www.perosh.org/>), a cooperation organisation of heads of research oriented working life institutes in Europe is currently working on four overall areas

- Emerging risks (e.g. increases in early retirement, globalisation)
- Work organisation and psychosocial factors
- Support for healthy workplaces
- Risks of nanotechnology

The European Agency for Safety and Health in Bilbao has worked since 2006 on defining new and increasing risks, and has drawn up a long list of risks in many areas.

There are of course opportunities for funding from European funding organisations in all countries, but each country also has special funds. Briefly these can be described as follows:

- The most important funders of working life research in **Finland** are: ESF, Finnish Work Environment Fund FWEF, TYKES (which in 2008 was brought into the development centre for technology and innovation TEKES – Finland's counterpart to Vinnova), the Ministry of Work and Industry, the Ministry of Social and health affairs, Finnish Institute of Occupational Health (FIOH), Academy of Finland and Technical Research Centre of Finland (VTT). The proportion of private funding has increased in relation to central government funding. According to TYKES there were about 3 200 persons active in R&D in working life during 2006. Apart from FIOH, research into working life is carried out at two other institutes (VTT and the National Institute for health and Welfare, STAKES). State financing of research into working life has increased in recent years. Labour market research is carried out in a number of places including the two research institutes, The Research Institute of the Finnish Economy (ETLA) and the Labour Institute for Economic Research.
- **Norway** has a number of institutes carrying out research into the area of working life: The National Institute of Occupational Health (STAMI); Fafo Institute for labour and Social Research, The Foundation for Scientific and Industrial Research (SINTEF); Work Research Institute (WRI); Norwegian Social Research (NOVA); the Ragnar Frisch Centre for Economic Research; and Institute for Research in Economics and Business Administration (SNF). A large proportion of research funds are channelled through Norway's Research Council which created the working life program, covering research on the labour market, salaries, occupational health, social partners as well as inclusion and exclusion. This definition also covers work organisation, gender and migration questions. A clear trend in Norwegian research on working life in the past few years is the focus on an inclusive working life.
- In **Denmark** the main source of financing is the Work Environment Research Fund (Arbejdsmiljøforskningsfonden). It takes a somewhat broader approach than what is generally described as the working environment in Sweden. A survey in 2006 showed that about 200 projects with a focus on the working environment were under way and these received financing of about DKK 90 million annually, of which 40 percent came from the Arbejdsmiljøforskningsfonden. The fund finances both basic research as well as development. In recent years research has been dominated by psychosocial, ergonomic and chemical factors. Danish research into working life is largely carried out at universities with funding from the Danish research councils, but there are also a couple of research institutes with substantial research, namely Danish Institute of Governmental Research (AKF) and The Danish National Centre for Social Research (SFI).

4. Swedish research into working life

Financing

By means of two survey questionnaires in 2004 and 2008, FAS has identified the external funding for working life research since 2001. The results indicate some instability in financing from certain funders in particular. This may be because the questionnaires in 2004 and 2008 were filled in by different people who may have interpreted the questions differently. Other differences may be due to reorganisation and changes in priorities. Table 1 below shows only the funders who are currently funding or have funded research into working life of some importance. The three dominant funders in 2007 were FAS, AFA Insurance and Vinnova. AFA Insurance's reduction from 2003 to 2004 is due to the inclusion in earlier figures of larger development projects which no longer exist.

The size of the appropriations is not the only differentiating factor between the different research funders. They also finance different research areas in working life.

Figure 7 shows the distribution of grants paid out in 2007 to R&D in different areas of working life. Whilst FAS in 2007 allocated grants approximately equally between the three areas of working environment, labour market and work organisation, AFA Insurance's funding was dominated by research into the working environment. Vinnova funded research into work organisation and labour market, but not research into the working environment (Figure 7).

Table 1. Results of surveys on financing 2004 and 2008. Paid annually for research, development, dissemination of knowledge, services, centres etc, total for working life (rounded up to nearest million SEK).

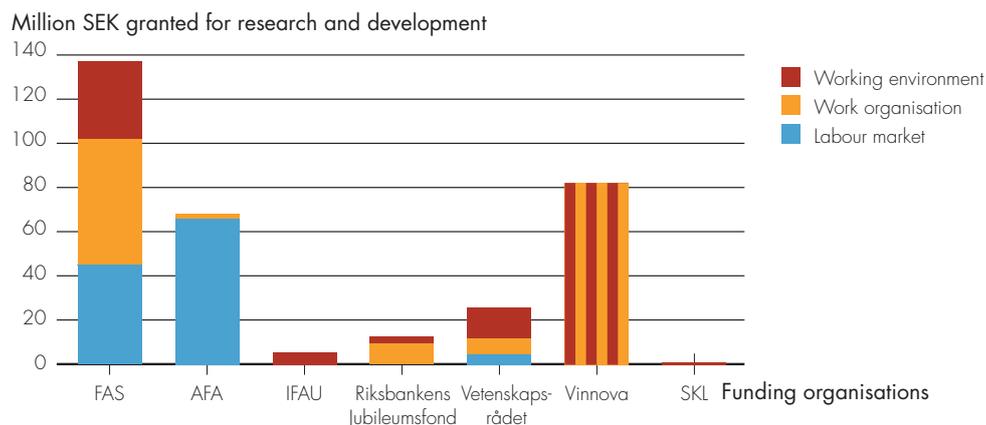
Research funders	2001	2002	2003	2004	2005	2006	2007
Swedish Council for Working Life and Social Research (FAS)	94	117	120	128	110	108	138
AFA Insurance (AFA Försäkring)	169	231	189	35	42	45	87
Formas	5	10	12	0	0	0	0
Institute for Labour Market Policy Evaluation (IFAU)	5	6	6	5	5	5	5
The Jubilee Fund of the Central Bank of Sweden (RJ) ⁴	5	14	17	2	0	32	12
Swedish Research Council (VR) ⁵	3	3	3	27	28	27	26
Vinnova	118	80	60	39	34	29	82
Swedish Association of Local Authorities and Regions (SKL) ⁶	3	3	5	2	1	1	1
Total	402	464	412	238	220	247	351

⁴ RJ's project support only covers research initiated projects. They provide no support specifically for research into working life.

⁵ The difference in figures between the questionnaires can probably be explained by the fact that the figures for 2001-2003 came from the Swedish Research Council's body on medicine and this presumably only covers research into the working environment, whilst the questionnaire for 2008 was based on all projects granted funds.

⁶ The figures from 2001-2003 come from the former Development Fund of the Swedish Association of Local Authorities. The last three years come from SKL.

Figure 7. R&D funds paid out in 2007 from the "traditional" research funders in different areas of research into working life (excludes grants for research communication)⁷.



Source: Survey results, FAS 2008.

In addition to these funders, there was significant funding to more developmentally oriented projects from the Swedish ESF Council.

Apart from these external grants, there are also grants from universities and university colleges and until its closure research grants allocated by the National Institute for Working Life, NIWL (NIWL's research units received SEK 237 million in the budget for 2006), and also state appropriations to IFAU's own research (about SEK 17 million 2006). Researchers from NIWL were able to use SEK 60 million of saved state appropriations. A rough estimate is that resources for working life research decreased by about SEK 200 million annually as a result of the closure of NIWL. As mentioned earlier, the proposal in the Research Bill for 2009 to 2012 was to increase appropriations for research into working life at FAS by SEK 20 million per year up to 2012.

Orientation

As in other research areas, working life research is affected by different trends. The survey of research into working life carried out by NIWL on an assignment from FAS and Vinnova (Levin and Wikman 2006) resulted i.a. in a list of research areas given priority by research groups taking part in the survey questionnaire. The table below show the three areas that were at the top in the respective main areas.

⁷ Vinnova provided a total figure for work organisation and the labour market. AFA Försäkring paid out in addition to the funds stated here, SEK 18.1 million for research communication.

Table 2. The research areas given highest priority (ranking), number of responses from participating research groups.

	No. responses
Occupational health	
Analysis of new physical and chemical risks or in-depth knowledge on old (i.a. for threshold estimates)	25
The relationship between working life, private life, and work from a life-cycle perspective	14
The analyses of new psychosocial work environment risks or in-depth knowledge of old	10
Work organisation	
Leadership questions, the situation for heads at different levels, conflict resolution	18
Changes in conditions for the organisation and management of production (private sector)	17
Changes in organisation and management of public activities	16
Labour market	
The dynamics and performance of the labour market	9
Competence and educational issues	9
Growth issues, structural change	6
Others	
Implementation of research knowledge, research concerning interventions of different kinds	19
Questions concerning methods	16
Different conditions for different groups	14
Gender research	13

Source: Levin, Wikman: Mapping of Swedish research into working life. ALI, 2006.

A review of projects granted funds from FAS during 2003–2007 showed that amongst projects studying the working environment, chemical factors dominated (47 percent). The corresponding analysis of work organisation and labour market projects did not reveal any specific sub-area as being dominant.

Researchers – number, age, gender and location

In a questionnaire from 2006 to Swedish researchers in working life, it was estimated that there were around 1,500 persons active in working life research (about 75 percent response rate). Of these persons, 41 percent stated that they were active in research areas concerning work organisation, 35 percent in working environment and 20 percent in the labour market area. Gender distribution was even.

A review of the age of researchers in projects receiving grants from FAS during 2007 indicated an encouraging influx of researchers into the labour market area, whilst it appeared to be somewhat more difficult to recruit new researchers with PhDs in the areas of work environment and work organisation. An analysis of questionnaires FAS sent to all projects and programmes since 2002 clearly showed a reduction in the number of researchers, primarily in the work environment area where the number decreased from 393 in 2002 to 129 in 2006.

The largest research environments in 2005 were the National Institute for Working Life and the older universities.

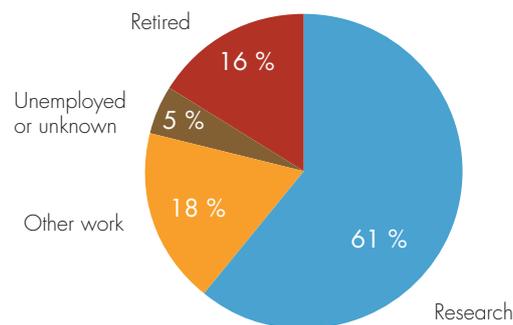
NIWL researchers' activities after the closure of NIWL

Slightly more than half the researchers at NIWL at its closure on 1 July 2007 were active in research in October 2008. Of the 51 researchers who left, 29 retired, of which 8 with old age pensions and 21 with pension compensation (Hägg and Persson 2008). Many researchers in universities and university colleges received at the closure 2 to 3 years salary, i.e. until the middle of 2010. It can thus be a matter

of concern that still more will leave working life research when no more funds are left for salaries. Experiences from researchers in the area of the working environment who had earlier moved from ALI to the university indicate that in particular applied research is decreasing.

A survey questionnaire in 2008 to all former NIWL employees (Sturesson, 2009) showed that the number of graduated researchers still carrying out research related to working life virtually halved between the decision to close down in 2006 and autumn 2008. Amongst women the proportion decreased to 56 percent in 2008, or from 99 persons in 2006 to 55 persons in 2008. Amongst men the proportion decreased to 56 percent in 2008, or from 93 persons in 2006 to 52 persons in 2008. This analysis does not take into account the new recruitment which would have taken place due to natural retirement if NIWL had continued as a research institute.

Figure 8. The proportion of researchers still active in autumn 2008 of those who were employees at NIWL at its closure in October 2006.



Source: Sturesson, L: ALI-forskarna två år efter nedläggningsbeslutet (NIWL researchers two years after the decision to close down); FAS, 2009.

Bibliometric analysis

In the 2006 FAS evaluation of Swedish occupational health research, an international group of researchers determined that Swedish researchers contributed about 8 percent of world production of scientific articles on work health and ergonomics (FAS 2006). It was stated that if the figures were adjusted for population, Sweden would then be ranked first in these areas. It was furthermore stated that Swedish researchers are quoted more frequently than the average. The analysis also showed that Swedish researchers in these areas co-operated internationally, primarily with other Nordic countries.

A review of articles on occupational health research 1992-2001 in eight journals found that Scandinavian countries accounted for slightly less than 18 percent of all articles. Measured by number of articles per inhabitant, the study showed Sweden as having the highest frequency (Navarro, Martin, 2004).

In addition, a review of articles, this time into the 85 most frequently quoted in research into the working environment since 1949, found that 16 (19 percent) came from Sweden. Most of this work comes from the USA (34 percent) while Sweden and the UK had the second largest number of articles (Gehanno et al. 2007).

The evaluators of the Institute for Labour Market Policy Evaluation, IFAU (FAS, 2004) were impressed by the high level of publications in international journals.

The evaluators of Swedish research into labour law during the years 1995–2001 (FAS, 2003) carried out an analysis of how well the research field was represented in a primary journal in the area (Legal Journal [Juridisk tidskrift] in comparison to publications in a German Journal (Juristenzeitung) [Legal work often has a national context and there is only limited scope for international publication]. The evaluators determined that the researchers were well represented in journals and stated that research on labour legislation was a well established field in Sweden.

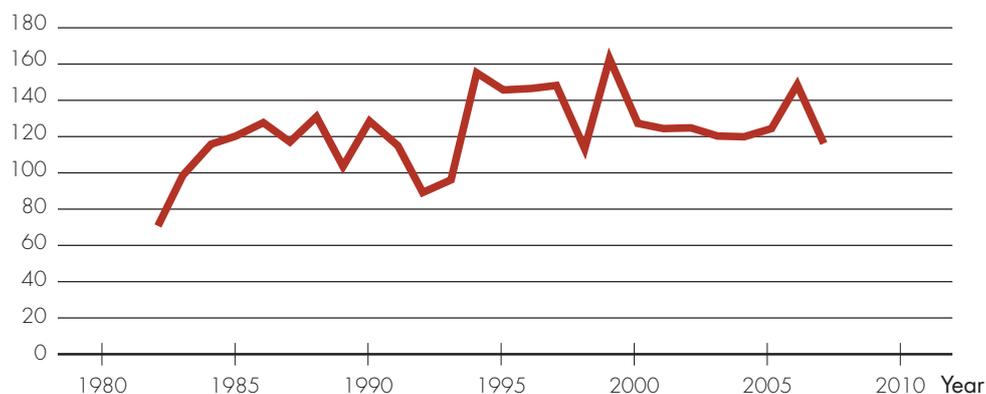
A limited bibliometric analysis was carried out during autumn 2008. The analysis was based on a number of journals in the working environment, work organisation and labour market where researchers into working life often contribute articles for publication. The analysis was not comprehensive.

- Working life researchers not only publish work in other types of journals, e.g. studies concerning cancer may be published in “cancer journals”, lung diseases in “lung journals” etc, which is probably occurring increasingly often.
- Other types of working life research can also be published in the journals studied.

The weakness of the method means that the study has to be interpreted with great caution.

The bibliometric analysis shows that the number of Swedish publications in journals varies over the years (Figure 9) but remains fairly constant. Similarly, frequency of citation varies over time, but does not seem to either decrease or increase trendwise. Frequency of citation is of the same order of magnitude as the average for Swedish research or slightly under this. The conclusion is that both publication frequency and citation frequency have probably remained constant over the last 20 years.

Figure 9. The number of publications between 1982 and 2007 in the selected journals.



Recent evaluations

Occupational health research (2007)

In 2006, an international expert panel of five persons carried out an evaluation commissioned by FAS within the framework of a government assignment. It covered chemical, biological and physical health risks as well as the ergonomic burden.

The research is considered to have good quality in all areas, relevant and strikes a good balance between new areas and development of existing research areas. As already mentioned a bibliometric analysis was carried out, which showed that Swedish research was above the average level in the world and that publications were of a high and stable level (maximum number of articles per inhabitant in the area of ergonomics and second highest in other areas).

Proposals for research areas that should be developed were:

- models for exposure measurements and related risk models
- systematic intervention studies
- implementation research

The evaluators also put forward proposals concerning:

- financing of research
- creation of a committee for analysis of the structure of occupational health research
- support for career development to obtain a regeneration of researchers and thus sustainable development in central areas
- development of systems for monitoring risks
- building up databases on health and exposure risks and data
- cooperation between research groups
- analysis of knowledge exchange between researchers and users

Evaluation by IFAU (2004)

An evaluation by IFAU was carried out in 2004 by two international experts and one Swede, on a commission from FAS. The Institute was considered to be one of the leading research environments in applied labour market economics in Europe. As mentioned earlier, the high rate of publication from the institute was pointed out.

Evaluation of labour law research (2004)

Research into Swedish labour law was evaluated in 2001 by two German researchers from the University of Köln on an assignment from FAS. They stated that the research consistently maintained a high level of quality but that there were areas where Swedish research did not exist. This was interpreted by the evaluators as due to a shortage of resources. Examples of such “gaps” were in areas concerning occupational health and working time, labour process law and the interaction between social insurance law and labour law.

The evaluators considered that research was relevant for society and evidenced good cooperation both in and outside Sweden. It was proposed that research in the area should be expanded to also cover, for instance, European labour legislation.

Swedish research from an international and Nordic perspective

Swedish research into working life enjoys a good reputation in the world. An international panel of experts, evaluating Swedish occupational health research (FAS, 2006) considered that:

Sweden has played a crucial role in the development of international research into the working environment. The bibliometric study showed, by using two different databases, that Swedish researchers over the last 20 years have contributed around 8 percent of the world production of scientific articles on health at work and ergonomics. If we adjust the figures for population, Sweden is ranked number one in these areas. Articles written by Swedish authors are quoted more than the average. The analysis showed that Sweden to a large extent has international research cooperation, primarily with other Nordic countries.

The international experts who participated in another FAS initiated evaluation concluded the following about IFAU (FAS, 2004):

IFAU should get the highest rating for the work carried out and the institute is today one of the leading research environments in applied labour economics in Europe. We wish to draw particular attention to the good international rate of publication achieved by IFAU.

On the other hand, it is more difficult to make comparisons between Sweden and other countries which cover the whole area of working life. Different countries define research into working life in different ways, and they do not have the same view of the term “research into working life”. In Sweden research into working life has traditionally been divided into the areas of working environment, work organisation and the labour market (including labour legislation). This division was used by the Swedish Institute for Working Life at an early stage, by the Council for Work Life

Research (RALF 1995–2001) and now by FAS. Closely related research areas, which are also financed by FAS, e.g. research into public health, welfare and living conditions as well as migration, have increasingly covered working life aspects. Another development is the innovation research funded by Vinnova in the area of working life, which aims at achieving concrete results in terms of higher productivity and work improvement, but which no longer has the health aspect it had in the beginning.

Finland, however, includes all research affecting working life in the term. For this reason, the Finnish Work Environment Fund finances research concerning learning and industrial relations parallel with traditional research into the working environment. Neither Norway has a clear definition but the Government attaches great importance to an inclusive working life, covering support for research into the labour market, working environment, work organisation, migration as well as into industrial relations.

The total volume of Swedish research on working life decreased after the closure of the National Institute for Working Life. In Finland there is an increase in research on working life. At the political level and in the media there are discussions on how working life can be improved, and grants for research have increased both for basic and applied research, as well as research into innovation. In Norway, there is in addition to a trend towards research into an inclusive working life, a move towards regionalisation of research into society, where researchers work close to regional decision-makers and businesses. There are primarily two factors differentiating Danish from Swedish research into working life. The first factor is the strong position of the social partners in the Work Environment Research Fund, something the Swedish social partners have not had in government research funding since the Work Environment Fund (Arbetsmiljöfonden) was closed down in 1995, but which nevertheless still remains through the financing from AFA Insurance. The second factor is that basic and innovation research are integrated in Denmark instead of separated as is the case in Sweden as well as Finland.

Finland appears to have more working life researchers than other countries. Finnish TYKES estimated in a study from 2006 that 3 200 persons were active in working life R&D, which was twice as much as compared with a similar study from 2001. This can be compared with about 1 500 “annual equivalents” in Sweden 2005 (Levin and Wikman, unpublished, 2006). The figure is probably lower today after the closure of ALI.

When comparing where research is carried out, it appears that universities are not as dominant in neighbouring countries as they are in Sweden. In Norway, Finland and Denmark there are research institutes run by the social partners, and there are also strong sectoral institutes (privately and publicly funded). The gender balance, according to those contacted, is not as equal in neighbouring countries as in Sweden but is developing in the right direction. In general women dominate among doctoral candidates, whilst senior lecturers and professors are largely men. In neighbouring countries there is no shortage of young researchers, but few young persons have a stable working situation, which in certain cases leads them to choosing a different professional path.

Government funding is very important in financing Nordic research into working life, but there are nevertheless differences between the countries. Swedish research is dominated by state funds from research councils to universities and university colleges, together with AFA Insurance. There are Swedish researchers receiving basic funding through faculty grants but these are in a minority. Finnish research receives large state appropriations but has greater demands on co-financing from industry or other funders compared to Swedish researchers. The Finnish social security fund is accountable to the government, but funded out of employers' contributions. The large funder in Denmark, the work environment research fund (Arbejdsmiljøforskningsfonden), is largely state financed but receives a sixth of its budget from the labour market partners, who also have great influence. In Norway the major financier is the Research Council of Norway, but gradual regionalisation of research is also taking place through cooperation with regional institutes and industry, the labour market partners and the public sector in specific geographical areas.

University research into working life

Research and teaching are the main tasks of universities. In the establishment of senior positions (lecturers and professors) efforts are made to satisfy both these requirements, but the scope can vary. Research is financed both by appropriations and external funds from research councils and other funders, whilst teaching is almost exclusively funded through appropriations. Teaching in the area of working life occurs to varying degrees in all the different faculties. In some of the social sciences, the area of working life is a non-important part of teaching within e.g. macroeconomics (labour market), law (labour legislation) and psychology (work and organisational psychology), whilst this element is significantly less in the medical and technical areas.

Universities are organised and work on the basis of their two main tasks (in accordance with the provisions of the Government Bill on Research and Innovation, Bill 2008/09:50, greater emphasis in the future will be put on cooperation with society, the so-called “third task”).

The universities do not have routines for channelling questions about working life from the general public or ministries to certain centres. Universities can thus not spontaneously be expected to create “knowledge centres” in specific specialist areas for e.g. other authorities or for the public to access information. In some cases specific funds may be allocated for this purpose. So, for instance, the Karolinska Institute receives special funds for supplying knowledge in the environmental medical field (IMM – Institute of Environmental Medicine).

Academic services can be divided into “education positions” (doctoral candidates and research assistants) and what could be called “end positions” (senior lecturers and professors). “End positions” may in certain cases be financed via university grants or externally financed, either partially or entirely. Discussions on recruitment in recent years have often focused on the shortage of postdoctoral positions, that is positions after thesis presentation. In order to obtain sufficient stability in research into working life, it is also important that there are enough positions such as senior lecturers/professors. It is also important for recruitment that the absence of promotional opportunities does not become the reason for young researchers not to enter the area after postdoctoral education, since they will apply to other areas.

Working life research exists in the majority of universities and university colleges. Nevertheless, an analysis of 29 higher education institutes' research and education strategies (Holmgren, Caicedo and Mårtensson, commissioned by FAS 2008) showed that working life research has not been given prominence in connection with strategic initiatives. The examination showed that only three institutions, namely Linköping University, Mälardalen University and Växjö University, gave priority to working life questions as a research area in itself. Four gave priority to a sub-area of research into working life: The University of Gävle, Jönköping University, University West and Karlstad University. Of the 29 higher education institutions, nine mentioned working life issues as an area subordinate to their priority research areas.

Communication between researchers and users

Communication between researchers mainly takes place via international journals, working papers, reports and books, as well as national and international conferences and symposia. The bibliometric analysis and earlier evaluations indicate that Swedish researchers into working life have good communication amongst themselves and also that they have good contact with international research.

In the evaluation of Swedish research into the working environment in 2007 the argument was put forward that there were shortcomings in the transfer of knowledge from researchers to users. State measures to identify, compile and circulate important findings to users who do not have their own scientifically based resources have decreased substantially through the closure of the National Institute for Working Life and the reduction in the central resources at the Swedish Work Environment Authority. In the current situation state support for the transfer of knowledge takes place primarily through FAS and Vinnova, which publish newsletters and summaries of knowledge, as well as the Institute for Labour Market Policy Evaluation (IFAU) through publications, seminars, courses, conferences and its web site. There are comprehensive information activities through Prevent (a

provider of knowledge and training in the area of safety and health at work managed by the social partners) and AFA Insurance.

In a declaration of intent in June 2008, The Swedish Trade Union Confederation (LO) and the Swedish Confederation for Professional Employees (TCO) state that “a weakness in working life research, increasingly evident over the years, is that its results are difficult to transform into practical measures”. They also point out the need for communication between users of knowledge and researchers:

Working life research is seldom based on a chain that starts with basic research or curiosity, but rather on an insight into the needs of the workplace and society. Ideas often occur in companies, in contacts between companies, in representative organisations or at e.g. occupational clinics. One basis for ensuring the usefulness and scientific quality of a research project is that it should be examined by both researchers and those who would benefit from the research.

But in the very beginning a description of needs is required. Historically employees have faced difficulties in expressing the research they need. Here an ongoing dialogue is required between the workplace and the research community. Today there are major shortcomings in this communication.

Similar views were expressed in a letter from the Confederation of Swedish Enterprise, LO and PTK to Minister Lars Leijonborg in October 2007 which states that: “A weak link in research into the working environment is often the lack of impact from results in terms of the application of practical measures at workplaces and in working life as a whole. Here the social partners have great opportunities and reason to act.”

The Swedish Work Environment Authority has a need for knowledge resources and has recently granted funds to acquire this as NIWL can no longer be used to fulfil such purposes. The Swedish Work Environment Authority obtained funds when NIWL was closed to produce the knowledge compendium needed for determining the threshold value for chemical substances.

One particular problem is the need for knowledge on working life for different authorities and ministries. The Ministry of Employment appointed a special Knowledge Council in autumn 2008 to be active until 2010 (Committee terms of reference: Working Environment Policy Knowledge Council. Dir. 2008:101).

Transfer of knowledge relates both to continuous monitoring of the knowledge situation with special reference to working conditions in Sweden, and developing knowledge where specific questions occur in practical situations or within authorities. This involves both purchasers and providers. Ongoing dissemination of research findings requires competent researchers in these areas, but the researchers must also have some insight into decision-making processes and settings at Swedish workplaces. Similarly on the recipient side, competence is needed to make use of research outcomes, e.g. safety delegates. The whole chain must function if knowledge is to be effectively used in practice. There are good examples in Sweden where this has worked e.g. prevention of lung diseases due to quartz, cancer risks from asbestos, brain damage in connection with organic solvents and allergic eczema due to chromium in cement. In a situation where Sweden lacks a general institute for research into working life, transparency, dissemination of knowledge and dialogue could be strengthened by creating one or more platforms at one or more universities, backed up by virtual solutions.

5. Conclusions

What would happen if special funds were not set aside for research into working life?

As shown by the review into research funding in the other Nordic countries, special funds are set aside for research into working life. This is the case also in some other countries, e.g. research is financed in the USA partly through the American Institute NIOSH. Many countries, as shown above, apart from special research funds also have institutes whose task is to carry out research into the area of working life. In Sweden after the closure of NIWL, the only body remaining which can be said to represent an institute in the area of working life is IFAU, in this case with a focus on labour market policy.

If there were no special funds, working life research, particularly in sectors such as medical and technical areas, would probably vary much more and probably be smaller in scope than today. Access to research funds is a strong driving force for researchers to work in a specific area.

It is also likely that Sweden in the future would lack high competence in certain sectors in the area of working life unless funds were allocated specifically for this purpose. Particularly vulnerable are the medical and technical areas, and it is our view that in these areas there would be insufficient competence to utilise new international research and participate in international research projects. This also has consequences on the opportunities for creating a national evidence based policy for working life and the education of experts to satisfy the needs of authorities, companies and organisations. This would also lead to a reduced preparedness to deal with knowledge development around questions arising as a result of changes in working life.

Special research funds may be said to be a type of guarantee for developing knowledge of important problems in working life and that there is some degree of stability and a real basis for researchers/knowledge in the area. Such funds can also be crucial for the recruitment of new researchers to the area.

Since there are aspects in working life that are specific for Sweden, international research and the build-up of knowledge cannot be expected to always cover Swedish needs. Dissemination of knowledge, as already pointed out, needs networks between researchers and persons with influence over conditions in working life e.g. development of labour market policy, personnel policy, strategic corporate development as well as work safety policies.

Special conditions for research into working life in Sweden

This question can be divided into two parts

- Some infrastructure, e.g. registers of high-quality, can facilitate carrying out certain research in Sweden.
- Conditions in Sweden may be such that there are certain positive/negative factors that differ from those in other countries. This can provide opportunities for some types of research, but can also be said to constitute a need for running research in Sweden.

Infrastructure

With its public registers of high-quality in conjunction with a general attitude that registers should be used for research, Sweden has unique opportunities for carrying out such studies. One advantage is that the registers cover the whole country and that linking registers is possible (some countries have strong controls against such linking).

In international terms Swedish researchers have very good access for carrying out studies requiring their presence at the workplace. In some countries it is difficult for researchers to gain access to workplaces, and even then the research must be limited to postal questionnaires, laboratory experiments etc. The shared views among the social partners on the Swedish labour market concerning many working life issues and in particular occupational health issues makes studies at the workplace possible.

Conditions unique to Sweden

Women in Sweden have a high participation in the labour force and this makes gender studies possible in environments that do not exist in many other countries.

Sweden has a high degree of trade union organisation in the labour market and studies on work organisation and the labour market will thus have a partially different content compared to corresponding studies in countries where this is low.

Sweden is amongst those countries with the lowest incidence of fatal occupational accidents. Studies in countries with “worse” conditions can focus on already known factors/methods, whilst Sweden must develop new methods to reduce their occurrence.

Studies of labour force participation of people with illnesses is dependent not only on national or regionally specific working conditions, but also on national labour rules and legislation, and the organisation and performance of the labour market, which is why studies in other environments cannot simply be transferred between countries.

Research into labour legislation takes as its starting point the legislation that exists in Sweden, which in certain respects differs from that of other countries.

Strengths and weaknesses

In the SWOT analysis below⁸ we have assessed research into Swedish working life.

Strengths:

- Sweden has very good access to many public registers of high-quality.
- Swedish society is open and researchers are usually welcome to carry out studies at workplaces which in many countries is difficult as researchers there are treated with reservations.
- There is a large group of highly educated researchers with a tradition of good research, in many cases of the highest quality.
- There is firm support from the social partners for research into working life.

Weaknesses:

- The number of researchers in some areas of Swedish research into working life appears to be decreasing. This applies particularly to occupational health, in which the number of researchers financed by FAS has decreased by two thirds since the turn of the century.
- In a number of areas basic financing is weak, e.g. in parts of work environment research. In combination with high competition for research funds and fluctuations in the volume of total financing available for research, the future for younger researchers is uncertain.
- Low-frequency in approving applications and great dependence on external funding for many researchers means that they choose to work in other research areas.
- Sweden is a small country with small research environments, which means that the national provision of knowledge is particularly vulnerable to rapid fluctuations in resource allocation (larger environments can more easily buffer such fluctuations).
- In parts of working life research today there are no structures for the long-term “maintenance of knowledge”. For instance, the Government has pointed out that it is important to understand how flexible forms of participating in the labour market have developed, as well as how companies have chosen to organise production. To understand how ill-health/health is affected by conditions at work, long-term knowledge in these areas is required.

⁸ **SWOT analysis**, a term in business economics which is used when the aim is to analyse e.g. a business or a project. SWOT stands for Strengths, Weaknesses, Opportunities and Threats. Source: National Encyclopaedia.

Threats:

- Sweden has a long tradition of successful transfer of knowledge to practical measures, which has led to better health and productivity (e.g. new forms of organisation and the withdrawal of organic solvents). This is due to good contact networks between researchers with good insight into Swedish industry, as well as good knowledge of the recipients. The weakening of stability in these structures as well as a reduction in total resources may/will lead to Sweden losing its leading position.
- Parts of the international cooperation takes place between different national institutes. The lack of such an instance means that Sweden runs the risk of being excluded from many international co-operation agreements and having less influence and fewer exchanges.
- Lack of confidence in the future stability of the area among younger researchers can make it difficult to recruit skilled researchers to the area.
- It takes a very long time to build up a tradition of outstanding research, but this can be quickly undermined. Lower funding levels in the area could in the current situation lead to researchers exiting the area as they are dependent on external funding. Since researchers active over the long term in the area of working life are the core of knowledge acquisition, society runs the risk of losing a stable and up-to-date knowledge base in the area of working life.

Opportunities:

- Changing working life gives rise to many new, unresolved research issues which can both stimulate and challenge researchers.
- A generational change brings forth new researchers who see new questions and can develop new methods for dealing with them.
- Sweden has a good international reputation in the area and thus a good foundation for expanding international cooperation.
- Results from interventions and implementation in Swedish working life can be evaluated in a better way than in many other countries. Such research is of great international interest.
- An international evaluation of Swedish working environment research designated three areas that should be developed:
 - Models for measuring exposure and related risk models
 - Systematic intervention studies
 - Implementation research
- The Government points out the need for knowledge on how people with different functional disabilities or sicknesses should have the opportunity to participate in working life, and the need for knowledge on how the role of occupational health services can be improved and developed through scientific methods.

Recommendations

In the long-term our view is that FAS with respect to funding should:

- Consider how funds are allocated between different research areas in a situation where the number of active researchers in parts of the area of working life have decreased substantially.
- Consider what the best forms of grants are given accelerating generational change.
- Consider how strong research environments of sufficient breadth can be supported so that the maintenance and dissemination of the knowledge needed by society is satisfied.

In the long-term our view is that FAS with respect to the focus of funding should:

- Make clear what new fields of research are important in the longer term.
- Together with other research funders or in other ways create regular compendia of Swedish research into working life, particularly concerning its orientation.

References

- Andersson E, Torén K: "Pleural mesotheliomas are underreported as occupational cancer in Sweden" in *Am J Ind Med*, 1995 Apr; Vol. 27 (4): 577-80.
- Arbetsmiljöverket (The Swedish Work Environment Authority): Arbetsorsakade besvär 2008 (Work related disorders) 2008 (2008).
- Arbetsmiljöverket (The Swedish Work Environment Authority): Arbetssskador 2007, preliminära uppgifter (Work-related injuries 2007, preliminary data), (2008).
- Arbetsmiljöverket (The Swedish Work Environment Authority): Statistik om belastningsergonomi, rapport 2007:6 (Statistics on the ergonomics of work burden), (2008).
- Dir. 2008:101. Kommittéedirektiv: Arbetsmiljöpoliciskt kunskapsråd (Committee terms of reference: Working Environment Knowledge Policy Council).
- European Commission: Better quality and productivity at work: Community strategy on health and safety at work 2007-2012. Brussels, 21.7.2007 COM(2007) 62 final.
- European Commission: Commission staff working document, Brussels 2007, SEC (2007) 215/2. Accompanying document to the communication from the Commission. Improving quality and productivity at work: Community strategy 2007-2012 on health and safety at work. COM (2007) 62.
- European Commission; Council resolution of 25 June 2007 on a new Community strategy on health and safety at work (2007-2012). (2007/C145/01).
- European Commission: Commission of the European Communities, Brussels 11/12 2007, COM (2007) 803 final.
- FAS: Utvärdering av Institutet för arbetsmarknadspolitisk utvärdering IFAU (Evaluation by the Institute for Labour Market Policy Evaluation IFAU) 1997–2004, (2004) Lennart Hjalmarsson, Annemette Sorensen, Steinar Ström.
- FAS: Utvärdering av svensk arbetsmiljöforskning (Evaluation of Swedish research into the working environment) (2007) Christer Hogstedt et al
- FAS: International evaluation of Swedish work environment research (2006) David Wegman, Alex Burdorf, Paul Oldershaw, et al.
- FAS: Arbetslivsforskning i Sverige – Kort historik, nuläge och framtida inriktning (Working life research in Sweden – Brief background, current situation and future orientation), (2004) Bo Oscarsson.
- FAS: Utvärdering av svensk arbetsrättslig forskning (Evaluation of research into Swedish labour legislation) 1995–2001, (2003) Professor em. jur. dr Peter Hanau, jur. dr Michael Gotthardt.
- Holmgren Caicedo, M and Mårtensson, M: Är svensk arbetslivsforskning prioriterad? En studie av svenska lärosätens forskningsstrategier (Is Swedish working life research given priority? A study of the research strategies of Swedish institutions of higher education). Unpublished report commissioned by FAS 2008.
- Hägg, Persson: Avvecklingsmyndigheten för Arbetslivsinstitutet – de uppsagda och verksamheten. (The authority responsible for closing the National Institute for Working Life - those given notice and operations), 2008.
- ILO: Global strategy on occupational safety and health. Conclusions adopted by the International Labour Conference at its 91st Session, 2003.
- Kadefors, R: Behov av möjligheter till ett utsträckt arbetsliv för den äldre arbetskraften. Rapport till regeringen (The need for and opportunities in extending working life for the older members of the labour force. Report to the Government). Swedish National Institute for Working Life, 2007.
- Levin H, Wikman A: Kartläggning av svensk arbetslivsforskning (Mapping of Swedish research into working life). Swedish Institute for Working Life, unpublished. 2006.
- NEW OSH ERA: Complementarities, gaps and new opportunities in research on OSH-related new and emerging risks. Final report. October 2007.
- Nurminen & Karjalainen: "Epidemiologic estimate of the proportion of fatalities related to occupational factors in Finland" in *Scand J Work Environ Health* 2001;27:161-213.
- Prop. 2004/05:80 Forskning om ett bättre liv (Research bill: Research into a better life).
- Prop. 2008/09:50 Ett lyft för forskning och innovation (Research bill: A Boost to Research and Innovation).
- Socialstyrelsen (National Board of Health and Welfare): Folkhälsorapporten 2005 (Public health report 2005).

Sturesson, L; Tengblad, P: Vart tog dom vägen? Uppföljning av forskare och forskning vid nedläggningen av Arbetslivsinstitutet (Where did they go? Follow-up of researchers and research at the closure of the Swedish Institute for Working Life) (FAS, Vinnova 2007).

Sturesson, L: ALI researchers two years after the decision on closure (FAS, 2009),
<http://www.fas.forskning.se/upload/dokument/publikationer/pdf/ALI-rapport%20Sturesson.pdf>

WHO: Workers' health: global plan of action. Sixtieth World Health Assembly, 23 May 2007. Objective 4: to provide and communicate evidence for action and practice.

WORK-IN-NET copied 090130 from: <http://www.workinnet.org>.



The Swedish Council for Working Life and Social Research
initiates and supports basic and applied research with a
view to improving our knowledge about working life,
public health and welfare.



SWEDISH COUNCIL FOR WORKING LIFE
AND SOCIAL RESEARCH