
The Nordic Seminar

An abstract about how four Nordic countries have used the MEADOW guideline

*Arbetsmiljöverkets analysrapport 2014:3
The Swedish Work Environment Authority; Report on Analysis 2014:3*

Preface

The abstract of the Nordic seminar about the MEADOW project can be written in many ways, and with different perspectives. The Swedish Work Environment Authority took the initiative to arrange the seminar and also the initiative to this abstract about the seminar. Therefore, it might be that the background lean on the Swedish perspective and pre understanding that represents knowledge in the area towards a combination of work environment and economic development.

The abstract is written by Ellinor Ivarsson, analyst at The Swedish Work Environment Authority, in collaboration with Annette Nylund, senior analyst/project leader for the seminar, and for the development of statistical analyses at the Swedish agency. The abstract is partly based on notes made at the seminar 2013, by Matts Rydin researcher at The Swedish Work Environment Authority, and complemented with documentation, papers and presentations, from the seminar, alongside some background information from previous analyses mainly based on so called Meadowdata.

The four Nordic countries have carried out their survey based on the guideline and performed analyses based on Meadowdata due to the different research questions in each country.

Questions about the seminar can be put forward to Annette Nylund at The Swedish Work Environment Authority. Questions about each country's contribution in the seminar can be put forward to each of the following, depending on presentation. Sweden; *Annette Nylund, senior analyst, The Swedish Work Environment Authority* Annette.Nylund@av.se and *Hans-Olof Hagen, Dr. Senior adviser, Statistics Sweden* Hans-Olof.Hagen@sch.se. Finland; *Simo Aho, researcher, University of Tampere* simo.aho@uta.fi. Denmark; *Pieter Nielsen, Associate Professor Dep. of Political Science, at Aalborg University* peter@dps.aau.de. Norway; *Espen Solberg, Special Adviser at Nordic Institute for Studies in Innovation, Research and Education, NIFU* espen.solberg@nifu.no. For detailed questions about the Norwegian analyses, contact the researcher responsible for the analysis. See contact information at the end of each section.

The Swedish Work Environment Authority
2014-12-23

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Introduction and background

The abstract of the Nordic seminar about the MEADOW project can be written in many ways, and with different perspectives. The Swedish Work Environment Authority took the initiative to arrange the seminar and also the initiative to this abstract about the seminar. Therefore, it might be that the background lean on the Swedish perspective and pre understanding that represents knowledge in the area towards a combination of work environment and economic development.

The four Nordic countries have carried out their survey based on the guideline and performed analyses based on Meadowdata due to the different research questions in each country. Still, there is an agreement that the results of the surveys will be interesting to mutually compare. Another way to deepen the discussion over the dynamics of organisations and work are mutual comparisons among MEADOW surveys of different countries, is benchmarking between the Nordic countries. This type of benchmarking can aim to push policy-making and can be utilised in planning the future priorities on policies regarding working life and to better understand innovation and economic growth, alongside the conditions for employees.

Boel Callermo, director at the Swedish Work Environment Authority and investigator of a new task force for international affairs within the agency, made a presentation about the Swedish Work Environment Authority and an introduction to the seminar itself.

The presentation of the background to the Meadow guideline was made by Annette Nylund analyst at The Swedish Work Environment Authority.

The Swedish initiatives

The Swedish Work Environment Authority arranged this Nordic seminar, in collaboration with four other Nordic countries, to exchange knowledge and experiences about the use of a guideline that aim to better fulfill the needs of information (statistics) and knowledge (analyses) of work organisation and value creation and economic growth.

The seminar focuses on how the MEADOW guideline has been used to formulate surveys in the Nordic countries between the years of 2009 and 2012. This gives the opportunity to see the comparability of the data across borders, but also to get new input to innovate the usage of the Meadow guideline.

The background to the Swedish initiative once started with a project called "Job creation" by the OECD. The OECD wanted to integrate knowledge of work organisations into the growth policies but lacked and needed statistical material to do so. Hence, in year 1994, the OECD gave Canada commission to gather data containing information about work, the organisation of work and learning. Canada accepted the commission and started collecting data at a modest pace. To speed up the process Sweden took the opportunity to do a pilot survey in 1995, collecting the same kind of information in Sweden. This made Sweden the only Nordic country to join this particularly effort. A book called "*Towards Flexible Organisations*" was released in 1996 by NUTEK in Sweden on the topic and was presented to members of the EU parliament and the Commission. The numerous positive reactions to the project resulted in a follow-up of the Flex-survey, submitted by NUTEK in Sweden, by the other Nordic countries. Norway, Finland and Denmark joined Sweden in 1998 creating the Nordflex study, based on

the Swedish initiative. Alongside, Sweden did a follow-up on the first survey-project resulting in a second survey and the publication called “*Enterprises in Transition*” released in 1998. In “*Enterprises in Transition*” it was studied how the importance of learning strategies affect profit and productivity of Swedish trade and industry in 1997.

The MEADOW guideline

Meadow is an acronym for the European Union project “*Measuring the Dynamics of Organisations and Work*”. The project was running from the end of 2007 to the beginning of 2010. The result from the project is a proposal of EU guidelines in the collection and interpretation of new data about work organisations, management and work practices as well as human resource development. With help from these guidelines new data can be collected that better aim to fulfill the needs of knowledge about work organisation and value creation and economic growth.

In year 2007 one university in Denmark and in Sweden, respectively, joined 12 other European universities in an EU commission called “the MEADOW project” (Statistics Sweden 2011). In the following text, retrieved from the webpage of the MEADOW Project, it is described what the project is: “*MEADOW (MEAsuring the Dynamics of Organisations and Work) is a European Coordination Action project that develops Guidelines for collecting and interpreting international harmonised data on organisational changes and its economic and social impacts for both private and public sector organisations. Our knowledge about the internal organisation of firms and organisations in Europe is fragmentary and incomplete, and at present we lack the information needed to deepen our understanding of the impact of the use of different organisational practices and processes of change on enterprise performance and employee outcomes. Reliable harmonised statistics on organisations and organisational change could contribute directly to policy initiatives aimed at increasing the flexibility and adaptability of organisations and employees while simultaneously improving the quality of jobs.*

MEADOW brings together a multi-disciplinary consortium of 14 partners from 9 European countries with an established track record in the design and implementation of both national and international survey instruments in areas that are complementary to the measurement of organisational change, including innovation, the use of ICT (Information Communication Technologies, editor’s note), working conditions, human resources management, and skills and training. The MEADOW consortium is actively supported by a number of the key European and international institutions with central responsibilities for data collection and dissemination, including the OECD, EUROSTAT, the European Foundation for the Improvement of Living and Working Conditions, the European Agency for Safety and Health at Work, and DG Employment” (The Meadow project website 2014).

In 2008 Sweden was invited to join the project in the role as an expert and observer (representatives from Statistics Sweden and the social partners). Sweden took the lead in making a full pilot employer survey 2009/2010.

Since Sweden has comprehensive register data at hand some of the questions in the MEADOW guideline are redundant. The questions’ that contributed with information already available in the register data was removed to make the questioner easier to work with. The other Nordic countries have access to the same kind of information in their register data. Hence, Norway and Finland essentially used the Swedish version of the MEADOW guideline for employers to conduct their research. In this way, Norway and Finland correspondingly became a part of the MEADOW project.



In summary, Sweden made a pilot survey for the employers in year 2009/2010. In Denmark and Finland the MEADOW guideline was used to create two surveys; one for employers and one for employees. Denmark combined the original questions with other questions linked to other Danish surveys. Finland used the Swedish version of the employer survey and the original Meadow guideline for the employee survey. Norway made a survey for the employers only. In 2012, Sweden made a follow-up and extended the survey to also focus on the employer's perception of the enforcement of the systematic management of the work environment (i.e. SAM). This follow-up survey is called NU2012.

In the figure below, the contents of the Meadow guideline is presented briefly. The Swedish survey includes all themes in the proposed guideline, but the technique in the collection of some of the Swedish data is to use the CIS (Community Innovation Survey) and ICT (Information Communication Technology Survey) and register data. The Swedish Meadow Survey covers in principle all themes of questions in the Meadow Guidelines and several other register data with high quality. Since all the Swedish Meadow data also can be matched with individual and firm register data, some questions in the Meadow guideline have been excluded in the actual new collection of data 2009-2010. This includes more or less all data about innovations and ICT and background data about the firm and the employees, as well as economic output data of the firm. The Swedish survey 2010 is presented with its themes, in the figure below (Statistics Sweden 2011a).

Swedish Meadow Questionnaire 2010, included themes (Statistics Sweden 2011a).

Introduction about the firm and the respondent

- A. Workforce characteristics
- B. Organisational structure and change
 - 1) Work practices
 - 2) Management practices
 - 3) Outsourcing and Collaboration
- C. Human resources
- D. Objectives and context of the firm.

The questionnaire includes several themes.

Section A: Workforce characteristics, gives information about number of employees, type of working contracts, and features of the staff structure etc.

Section B, is divided into three parts: the first unit 1, Work practices; and part 2, Management practices, provide mainly information about firms work organisation and practices as well as the firm's structural learning. Information from the last part 3, Outsourcing and Collaboration, is not yet used. This information will be used together with CIS and ICT data in chapter 9 studying the firm's link to its environment.

Section C: gives information about employees' individual learning.

Section D: is not used even though some data are collected, since other individual and firm data are available and of good quality (Statistics Sweden 2011).

The agenda of the seminar

09.00	<i>Coffee or tea</i>
10.00	Welcome Boel Callermo, Director at Arbetsmiljöverket and investigator of a new task force for international affairs within the agency.
10.15-10.30	Introduction, Annette Nylund, Project leader Project Positive Work Environment Indicators (PAI) at Arbetsmiljöverket.
10.30-11.30	Sweden <i>Lunch break, buffet lunch, tray lunch in dining hall</i>
12.30-13.30	Finland <i>Short break/coffee</i>
13.40-14.40	Denmark <i>Short break/coffee</i>
14.50-15.50	Norway <i>Short break/coffee</i>
16.00-17.00ish	Discussion and conclusion, concerning all four countries presentations. Introductions will be made by professor Annika Härenstam Professor at Gothenburg University Sweden and Tuomo Alasoini chief Adviser at Tekes Finland.
About 17.00...	Closing remarks, Ann Ponton Klevestedt, Head of Unit of Statistics and Analysis at Arbetsmiljöverket.

The people presenting in the seminar

The participants of the seminar have been invited for several reasons. Some have been invited because they are scholars or researchers who have been active in the studies presented in the seminar. Other people invited to the seminar are financiers, decision makers, analysts and some project leaders that has been a part of the Meadow project from the start. For a full list of the participants, see page 20.



Sweden

The presentation about the usage of the Meadow guideline in Sweden is made by Annette Nylund analyst and Amanda Waleh Åström statistician, both at The Swedish Work Environment Authority, and Hans-Olof Hagen, senior adviser, Statistics Sweden.

The Swedish full pilot survey, 2009-2010

Hans-Olof Hagen, Dr. Senior adviser, Statistics Sweden Hans-Olof.Hagen@scb.se

The black box

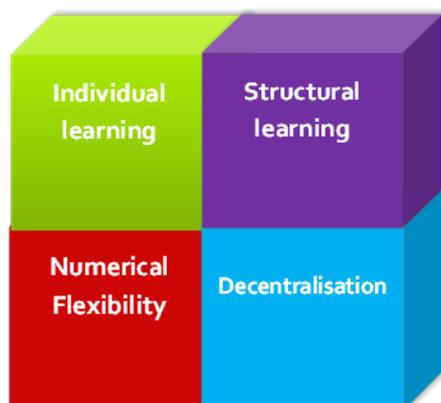
Classical economical growth models primarily describe changes in growth rates on aggregated levels and even though it is good that they stand out for aggregated mathematical input and output models, they have to be complemented. Today, even economists call these models “the black box” because they lack a description of what is taking place in the firm. The principle idea behind these traditional aggregated methodological assumptions is the desire to sum up the result of the entire economy, since all activities count. A complementary argument is that analyses on disaggregated levels based on growth in businesses, industries or enterprises can give the wrong impression, due to resource allocation and different values of output between economic sectors, businesses, industries and firms. New endogenous growth theory emphasises that activities in the firms are important to understand value creation and economic growth.

Firm productivity and the black box

When it comes to explaining firm productivity four important blocks, inside “the black box”, was distinguished as important determinants of economic performance and working conditions; Individual learning, structural learning, numerical flexibility and decentralisation. A description of the components of “the black box” is presented below.

- **Individual learning:** An organisation that let the employees develop and learn as individuals as well as letting them be in a context that develops and learns, satisfies a number of basic human needs. If the individuals learn more they can change more, thus adapting to a changing environment.
- **Structural Learning:** Structural learning can also be called organisational learning. Adaptability is important for the organisation and this part of the box describes how well the organisation learns from its environment. The organisation should be able to listen to new customer demands, changes in the competition or other important changes outside the firm.
- **Numerical flexibility:** This is defined as small stocks and the use of just in time practices and the ability to reduce labour costs in a short time.
- **Decentralisation:** It is essential for human beings to be in control of their lives. The decentralisation of power gives the people “on the floor” more power, which is essential for their well-being.

Figure 1. The aim to colour the former “Black box”



Source: Nylund 2011, first published in *Yearbook on productivity 2011*.

The data was submitted from 19 questions in MEADOW is used as indicators for work organisation and divided into four composite indicators. The result of the analysis of the 19 questions is that the black box is reformed. This data was submitted with help of the Meadow questionnaire about work organisation.

The data were used to analyse what parts of the “black box” fuels or slow the six categories: innovation (Community Innovation Survey, CIS) processes of the firm, ICT (Information Communication Technology Survey), Gender Equality, working condition impact, long term productivity and long term working conditions. That is, the different parts of the black box are each included in different models (ten different analyses) as explanatory variables to see what effect it has on each of the six dependent variables described above. You find the definitions of the six categories below:

Innovation

Organisation study using MEADOW-data.

The Oslo manual defines innovation into four categories: product innovation, process innovation, marketing innovation and organisational innovation.

Information and communication technology (ICT)

Organisation study using MEADOW-data.

ICT refers to both the use of information technology (IT), as in computers and internet, but also to the managerial part which involves means of organising the technology (communication).

Gender equality

Individual study using MEADOW-data.

When it comes to gender equality, four different variables came to define the differences between men and women; parental leave, VAB (care for sick children), the distribution of leading positions between men and women and wage.

Working condition impact

Individual study using MEADOW-data.

It is investigated how working conditions affect the sickness leave, the probability of working at the same firm some years later and the career development. It is expected that the decentralised firms and the firms that are good at individual structural learning have better working conditions, while the researchers are hesitant about the numerically flexible firms.

Long term productivity

This survey was an organisation study conducted in 1998 based on NUTEK-data; hence, it is not based on Meadow survey data but published in *“Learning organisations matter”* (SCB 2011).

Long term working conditions

This survey was an organisation study conducted in 1998 based on NUTEK-data; hence, it is not based on Meadow survey data but published in *“Learning organisations matter”* (SCB 2011).

The methods used in all analyses (about ten different studies) are the multivariable regression analysis, factor analysis as well as correlation analysis. The main results are presented in the matrix, figure 2. The indicators that have a strong significant positive impact (<1 per cent level) on the dependent variables are marked with bottle green. The light green colour indicates that there is a positive relation but that it is weak (<5 per cent level). The question marks indicates that the results are not statistical significant. When the question mark is green the result is positive, but not significant. The red boxes indicate a strong negative significant relationship.

Figure 2. Main results from the first Swedish Meadow survey 2009/2010

	Innovation	ICT	Gender equality	Working condition impact	Long term productivity	Longterm working conditions
Numeric flexibility	Green	Green	Green	Red	Red	Red
Decentralisation	Green	Light Green ?	Grey	Green	Green	Green
Individual learning	Green	Green	Green	Light Green ? ?	Green	Light Green
Structural learning	Green	Green	Light Green	Light Green ? ?	Grey ?	Grey ?

Source: PowerPoint, Hans-Olof Hagen, Statistics Sweden, 2013.

- Innovation has a strong positive relation with all parts of the black box, indicated by the green colour.
- Numerical flexibility is the part of the black box that differ the most between the different categories. It has a strong positive impact on innovation, ICT and gender equality, but a negative impact on working condition impact, long term productivity and long term working conditions.
- Decentralisation has a strong positive impact on innovation, working condition impact, long term productivity and long term working conditions. It has no impact on gender equality and weak non-significant impact on ICT.
- Individual learning has a strong positive impact on innovation, ICT, gender equality and long term productivity, no significant impact on working conditions impact and a weak positive impact on long term working conditions.
- Structural learning has positive impact on innovation and ICT and a weak positive impact on gender equality. It has no significant effect on the other three components.

It is interesting to see that so many strong positive relationships are found in the study.

The Swedish Work Environment Authority Baseline Survey - NU 2012

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Amanda Waleh Åström, statistician, The Swedish Work Environment Authority, Amanda.Waleh-Astrom@av.se

The report "Anthology - indicators of a positive work environment" mentioned in this text is not yet published, but some of the reports based on NU2012 called *Arbetsmiljöverkets analysrapport 2014:1, 2013:1 and 2013:2* (and eventually also the anthology) can be found here: <http://www.av.se/statistik/faktarapporter/ovrigstatistik.aspx>

The Swedish Work Environment Authority presented that the Swedish government has given the assignment to follow what excel firms with a good work environment from others. It is a work in progress. In 2010, the government requested a review on how to follow the development of a good work environment. The review was followed up in 2012, by the government that added to the task the developing of indicators of positive work environment. This resulted in a survey-project called NU2012, more specifically a baseline or contemporary survey of the year 2012. The work was harmonised with The Swedish Work Environment Authority's Work Environment Action Programme 2012-2015. The program's goal is to increase the working life knowledge and application of systematic work environment management. Therefore, the aim of the NU2012 is two folded; it is to investigate the knowledge about the systematic management of the work environment (i.e. SAM, systematiskt arbetsmiljöarbete) among Swedish firms and to developing indicators of a positive work environment.

The survey NU2012, to employers in the Swedish work life, contains two main themes: 1) Systematic management of the work environment (SAM) and 2) Work organisation, including some new questions developed to primarily focus on decentralisation and work contracts (i.e. working conditions). This is in line with the hypothesis that differences between how firms handle SAM is determined by how the work organisation is constructed. This is an important link between SAM and indicators for work organisation, the later based on the MEADOW guideline that comes to use. In other words, it is essential to find out what it is in the construction of the firm that fuels the good work organisation that includes SAM. MEADOW

contains relevant information about the organisations to examine this relationship, alongside complementary questions about how SAM is used. Statistics about SAM have been analysed in different industries categorised in five classes of organisation sizes in order to get a general picture of the situation in Swedish organisations.

The relationships between the use of SAM and work organisations has also been performed together with register data about the industry and employees.

The two themes about SAM and about work organisation can together contribute to enforce the Swedish law “...to prevent ill-health and accidents in work and in all create a good work environment”. The different perspectives are marked with green and red respectively in the following text.

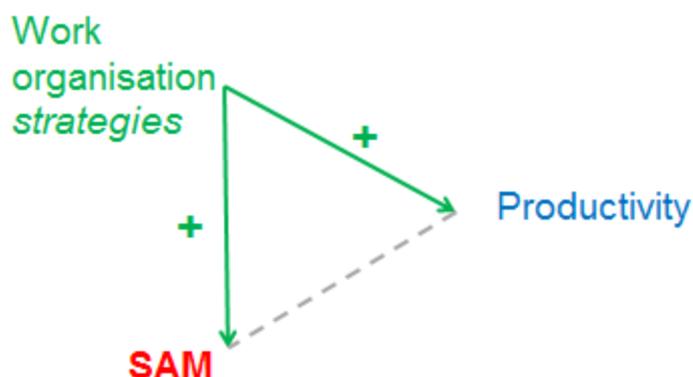
§1 Good working environment

- Employees participation in
 - the design of their own working situation
 - the processes of change and development affecting their own work.
- Provide opportunities of variety, social contact and cooperation, and coherence between different tasks.
- Working conditions shall provide opportunities for personal and vocational development, and self-determination and professional responsibility.
- Remuneration forms, and distribution of working hours into account
- Closely controlled, restricted work shall be avoided or limited.
- Technology, work organisation and job content shall be designed so it not subjected physical or mental strains, ill-health or accidents.

Results

It is found that work organisation strategies had a positive impact on SAM and productivity.

Figure 3. Relationships between Work Organisation and SAM and Productivity, respectively



Source: Forthcoming Anthology - indicators of a positive work environment

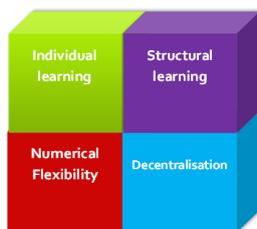
In the figure below, work environment strategies are presented as predictors of labour productivity. Those marked with green plus-signs have a positive impact on labour productivity. The plus-signs marked with the darkest green colour are significant on the 1 per-cent level, the light green plus-signs are significant on the 5 per-cent level and the hollow green plus-signs are significant on the 10 per-cent level.

Figure 4. Work organisation (the black box) and labour productivity, based on NU2012

	Labour productivity	
	2010	2001 - 2010
1. DEC/plan	+	+
2. Structural Learning	+	+
3. Dev/promotion	+	+
4. DEC/quality	+	+
5. TEAM	+	+
6. Temporary empl.	-	-
7. Empl. agency	+	+
8. COMPETENS	+	+
DEC/plan x DEC/kvalitet	+	+

Source: Forthcoming Anthology - indicators of work environment as predictors for productivity

The colours of the organisational components in figure 4 are marked in colours corresponding to the ones used to describe the former “black box”, that is why the figure is presented again below:



- Decentralisation (marked in blue) has a weak to strong significant positive impact on labour productivity. A weak impact implies a significance level of 10 per-cent, whereas a strong significant impact is significant on the 1 per-cent level.
- Structural learning (marked in purple) essentially has a strong significant positive impact on labour productivity, in 2010, but mostly over time.
- Numerical flexibility (marked in red) is more ambiguous. Temporary employment has a significant negative impact on labour productivity, whereas employment agencies have a strong significant impact on labour productivity.
- Individual learning (marked in green) has a significant positive impact on labour productivity.

A selection of the population of all organisations in the Swedish business sector answered the survey. To determine the statistical power of the data material a missing value analysis was made to compare the non-respondents with the responding part of the population. It was found that both groups followed the same pattern and that the data had no systematic missing value. Hence, it was concluded that the stratified data material has good quality and might well be used for different future purposes and analyses.

Conclusion

The interim results of Sweden’s first MEADOW survey 2009-2010 and NU2012 brings up many interesting questions which are proposed to be studied in more detail with further analyses. The results can be utilised also in planning the future priorities of research on working life and its development as well as predictors for innovation and economic growth.



Finland

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The interim results and a summary of the Finnish Meadow project is found here: <http://www.tekes.fi/en/whats-going-on/news-2013/liiderinews/interim-results-of-the-finnish-meadow-project/>

Finland performed both an employee and employer questionnaire, 2012

Finland's MEADOW survey was carried out by Work Research Centre, University of Tampere and Statistics Finland during 2012–14 with Tekes funding. Its contents have been influenced not only by the European project that created the MEADOW methodology but also by the contents of national MEADOW surveys of Sweden, Norway and Denmark. Some parts of the contents of Finland's MEADOW survey, however, differ from the corresponding surveys in other Nordic countries. Finland's survey, among other things, contains more questions related to organisational changes and ways to implement them as well as to the role of employees in those changes and their wellbeing. The data in Finland's MEADOW survey consists of employer and employee interviews.

The main goals of MEADOW in Finland are:

- To find out how developed the forms of organisation are, their management practices and ways of labour usage in various industries and sectors.
- To find out how these practices are connected to the success of the organisations and the well-being of employees.
- To help understand the needs of development of firms and public organisations in Finland.

Employer interviews were carried out in March–June 2012. They consisted of 1 531 telephone interviews with a net response rate of 76%. The interviews were directed only to employer units who had at least 10 employees.

Employee interviews of the employer units whose representative had been interviewed were carried out in September–December 2012. The employees to be interviewed were randomly selected from these units, based on the register data. The purpose of the employee interviews was to complement the information obtained from register data and employer interviews.

Innovation

Based on the employer unit interviews the organisations were divided into four groups based on their level of innovation.

Measure of innovativeness:

- Variable with the following ordinal scale:
 - (3) Organisation has introduced a product or service that was a novelty at the market
 - (2) Organisation has introduced a product or service that was new to itself but not at the market
 - (1) Organisation has improved production processes or renewed marketing methods or introduced business innovations (only asked at the private sector)
 - (0) none of the above mentioned innovations

- If the organisation fulfilled more than one of the criteria, it was placed into the highest of possible classes

It was found that:

Innovativeness was the greatest in information-intensive industries (e.g. the chemical industry, electro-technical, the electronics industry and manufacturing of machines and equipment). On the other hand, innovation was minor in the industries of construction, mining and in those services that are not information intense.

The well-being of employees

A combined variable, called “work pleasure”, was constructed on the basis of questions regarding how often the respondent felt:

- joy at work
- satisfaction with the job
- strong and energetic at work
- enthusiastic about the work
- satisfaction, while concentrated at work

It was found that:

Work pleasure was experienced, more often than elsewhere, in companies that had brought new products and services to the markets.

Work pleasure was the least in companies that had not carried out any changes. However, the differences between the groups were not statistically significant. Work pleasure had a clear connection to the type of organisational change. Work pleasure was greater where the change had caused increased activity, new operations or decentralisation.

On the other hand, for organisations which had centralised responsibilities, work pleasure was clearly lower. However, it was at its lowest in organisations that had reduced their activities, for example by outsourcing. Large changes in the operating principles of the organisation, such as moving from a traditional line organisation to a matrix, caused similar experiences of negativity. It was also interesting that in companies or public bodies that had not changed their organisation during the past two years, work pleasure was clearly below average.

The results tell us that success in organisational change requires special know-how. This applies especially to big policy changes. Even though changes of this kind may seem justified in light of pure economic calculations, they often fail because the management is not able to anticipate the negative impact on productivity caused by disappearance of engagement and joy of people in their work. The solution, however, is not to avoid changes. Without constant fine-tuning, organisations erode. The results indicate that people do best in organisations that grow or dare to delegate power and responsibility.

Conclusion

The interim results of Finland’s MEADOW survey brings up many interesting questions which are proposed to be studied in more detail with further analyses. The results will be utilised also in planning the future priorities of research on working life and its development.

Denmark

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Work in Change - dilemmas in private and public work relations

In general the common understanding of work relations has changed: From conflicting interests between management and employees towards consensus of interests and focus on development opportunities. It is anticipated that the social relations in a firm has a more central role today than it did a hundred years ago.

The aim of the study:

- To unveil how employees from different positions experience their work and how work have changed.

In the year of 2010 around 6 000 employees were contacted via email or telephone to answer questions about their situation at work. Out of these, 3 650 individuals answered the questions. Similar questions have been inquired to 1 500 organisations where 600 of these responded.

A framework has been built to set the approach and state propositions on how work relations have developed.

The drivers for this study are:

- External context: globalisation and new technology
- Internal frames: New organisation and management

Work relations and dilemmas within the organisations:

- **Management relation:** performance vs. involvement
- **Team relation:** autonomy vs. control
- **Work relation:** empowerment vs. loyalty
- **Well-being relation:** social support vs. security
- **Competence relation:** formal skills vs. competence building

Results

A descriptive analysis was conducted obtaining the following results:

Management relation: performance vs. involvement

Changes within the organisation such as the implementation of new technology or new procedures of work affect the employees differently depending on how the managers handle the change. The focus on performance management and the employees' involvement in the change is crucial in understanding the employee experience of the organisational change. The management relation analyses the range of performance management and management by objectives under presence of organisational change. It was found that:

- There was performance pressure on employees
 - *Frequently impossible to reach work targets*
 - *Working to tight deadlines*
- Technological changes has the largest impact on work



- Also relocation of employees and the implementation has large impact on work
- Significant relations between performance pressure and changes with impact on work
- Employee involvement and participation in change processes
- Significant relations between tight deadlines and degree of employee involvement in change
- Also significant relation between involvement and participation in change

Team relation: autonomy vs. control

There is a growing interest for autonomous teams and how they evolve and what types of autonomy and multidisciplinary that occurs. The internal control and the external control are examined and how this affects the results of teamwork. This can also have an impact of work pace and the well-being of employees. It was found that:

- Teamwork is growing and quite common among all employee groups
- Teamwork and individual work goes hand in hand for many employees
- Autonomy in teams mostly imply coordination and carrying out the work
- More than half of the employees have experience with interdisciplinary teamwork
- Team autonomy goes hand in hand with external control and pressure on pace of work
- Work tasks are widely recorded by computer systems

Work relation: empowerment vs. loyalty

The employees' influence on work is an important dimension of "the good work" and is also important from a relational perspective. When studying this, it was found that:

- Influence on operational work means decision latitude on task, tempo and practices
- Conscience of "self-management" is widespread among employees
- Influence on tactical plans of change mainly where employee ownership is important
- Significant relation between influence on work and influence on plans of change
- Very strong loyalty to firm - related to influence on tactical plans

Well-being relation: social support vs. security

Job satisfaction is two folded, on one hand there is the presence of social support and responsibility and on the other hand there is employment security. When examining these factors, the following is revealed:

- There is very high social support amongst colleagues and also help from management in difficult situations
- Well-being do not vary so much but employees in public service score the lowest
- Positive relation between well-being and social support
- Employment security is biased and depends on formal skills
- Absence caused by work is most common for unskilled in private jobs and skilled in public jobs
- Job satisfaction is very high and related to well being



Competence relation: formal skills vs. competence building

Do the formal qualifications play a role in determining the opportunities to develop skills and build resources through work? The answer of this question is important to uncover both the employee's and the employer's possibilities to develop.

- Work experience required for job relates to formal skill level
- Despite increasing skill demands a majority feel that they have skills to cope with more demanding duties
- The low skilled spend shortest time on training and education related to job
- Extensive use of training and education is related to uncovered training needs
- Complex problem solving is strongly related to learning and innovative initiatives
- Surprising results of model on innovative competence building

Norway

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For detailed questions about the analyses, contact the researcher responsible for the analysis. See contact information at the end of each section.

Using Meadow data to explore the relations between work organisation and innovation in Norwegian firms

Based on matched Meadow and CIS-data NIFU (Nordic institute for studies in innovation, Research and education) analysed the effects of *on the job* and *off the job training* on innovation (CIS stands for Community Innovation Surveys and is a harmonised survey in the in the European Union, designed to give information about innovation). In the preliminary findings from two analyses NIFU explored the relations between forms of learning, knowledge intensity and innovation in Norwegian firms.

There is a “Norwegian paradox”, Norway is a moderate innovator but the output is high. The main explanations for this are:

1. High level of GDP, i.e. gross national product
2. Small high tech sector – high value creation in raw materials based industries (oil, gas, fish, metals)
3. Methodological issues – R&D and innovation insufficiently captured by conventional R&D and innovation indicators
4. Flexible, dynamic and learning intensive work forms

However, Norway has a large share of companies providing training and adults participating in training and a high frequency of discretionary learning.

The Norwegian MEADOW study

- Covers 714 Norwegian enterprises with at least 20 employees in the private sector (i.e. excl. public sector and primary industries)
- Survey carried out March – June 2011 by Statistics Norway (SSB)
- Employer questionnaire only
- Sample drawn from the R&D/CIS and ICT survey sample
- Combined data-set available for NIFU 2013

Research questions

- Are enterprises with high levels of training more likely to be active in innovation?
- Which forms of learning and which forms of innovation?

Data-set from the Meadow survey (2011), which is linked both to CIS-data (2010) and Education register data (2011).

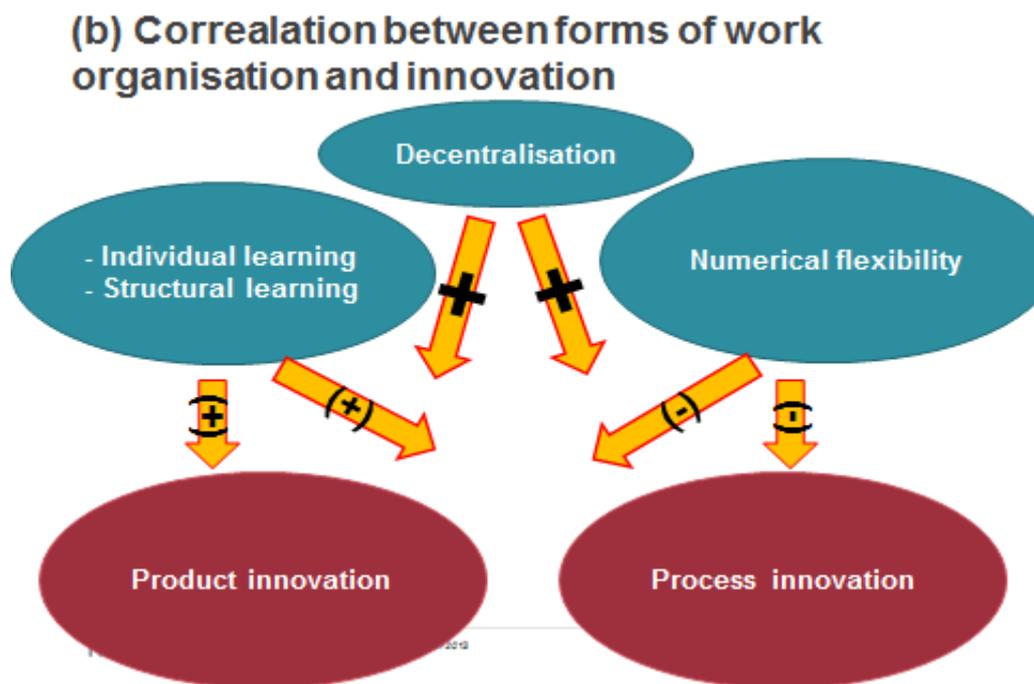
Conclusion

- *On the job* training seems to be more strongly correlated with innovation activity than paid *off the job* training.
- Confirms findings from several similar studies

- Causality: Is on the job training contributing to innovation, or is such training a strategy to *tackle* the changes and renewal processes which arise from innovation activity?
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This study examines how decentralisation, numerical flexibility and structural- and individual learning correlates with product- and process innovation. In figure 5 the correlations are marked with yellow arrows with negative or positive signs, depending on how they affect the dependent variables. If the explanatory variable has a statistically significant impact on the dependent variable, the sign is marked in bold text. If the result is not statistically significant, the sign is put inside a parantheses.

Figure 5 Correlation between forms of work organisation and innovation.



Source: PowerPoint presentation, Espen Solberg, 2013.

- In general, high frequency of all 4 forms of work organisations, especially individual and structural learning
- Individual and Structural learning are positively correlated with product and process innovation, but not significantly
- Numeric flexibility is negatively but not significantly correlated with product and process innovation.
- Decentralisation is positively correlated with both process (0,13) and product (0,16) innovation
- Tentative conclusion: Decentralisation is more conducive to innovation in Norwegian enterprises than flexibility
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Main conclusions from the seminar

The countries participating in the seminar made contributions to the use of the MEADOW guideline, by using data based on the guideline but due to different research questions. Sweden and Norway have used the guideline concerning questions about work organisation and combined it with survey data about innovation and register data about economic growth. The Swedish analyses is focusing on the combination of work environment and innovation and growth, while the Norwegian analyses is focus on innovation and economic development as such.

Finland and Denmark turns the focus towards the work organisation. In Denmark and Finland the MEADOW guideline was used to create two surveys; one for employers and one for employees. Denmark combined the original questions with other questions linked to other Danish surveys. Finland used the Swedish version of the employer survey and the original Meadow guideline for the employee survey and Norway made a survey for the employers only.

The research groups in the countries have had different access to the data and this seminar shows the spectra in the use of the MEADOW guideline. Altered methods have been used in different countries, making it interesting to see what potential the material has for future analyses. These different approaches will open up the opportunity for improvement of the existing strategies for future analysis. Hopefully this will increase pressure in finding similarities in the studies to be able to make comparisons across country borders. So far, four Nordic countries have carried out the survey. In fact, there is an agreement that the results of the surveys will be interesting to mutually compare.

Another way to deepen the discussion over the dynamics of organisations and work are mutual comparisons among MEADOW surveys of different countries, outside the Nordic countries. Hopefully the results of the Nordic surveys and the opportunities of international comparisons motivate other countries to use the MEADOW methodology.

The type of benchmarking that aims to push policy-making can be utilised in planning the future priorities on policies regarding working life and to better understand innovation and economic growth, alongside the conditions for employees.

The bottom line is that it is important to consider how this material could be used in the future.

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Denmark:

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The interim results of the finnish MEADOW project. <http://www.tekes.fi/en/whats-going-on/news-2013/liiderinews/interim-results-of-the-finnish-meadow-project/>

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