AGEING PEOPLE AND WORK LIFE

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Abstract

The rapid change of the age structure and its widespread reflections on all levels of society calls for immediate new combined actions. To cope with the general challenges posed by ageing in the near future, we need not only multidisciplinary research that takes complex working and living conditions into account by also a genuine interest in the operation of workplaces and enterprises, a real understanding of the working life, a reform of the procedures of working organizations, a new kind of cooperation between enterprises, authorities and experts and comprehensive vision, information of high-quality, openness, confidence, interaction, mutual respect and appreciation. The key question is how know-how concerning high ability and the application of new information can be improved at workplaces and how training can help people at workplaces to make their work more sensible and inspiring, to make the workplace a place where they like to work and that does not injure ageing workers or accelerate the deterioration of their mental and physical fitness for work. It is particularly important to encourage the managers of small enterprises to see the general picture. In the training and development activities of enterprises the management should consider the work ability of the personnel (and lifelong learning, which helps maintain and promote it), incentive activities, motivation and knowledge management. This, together with productification of services suited for different work organizations, is also the main objective of the newly established Institute for High Ability of Work Organizations of The University of Tampere. Right from the outset, the operational guidelines of the institute included the idea that none of these main areas can be separate and independent of others, but the entire operation must be interactive to produce synergy and added value. A good starting point for such innovations is provided by our recent finding that people are the more willing to continue working, the more energetic and satisfied with their own life they are and the more meaningful they find the work. To put it briefly, a happy worker is productive worker. In other words, the parallel development of labour and business policies, and areas of family, social, health and education policy is the very means that could in the future prevent such panic situations western societies now face due to the distortion of the population structure, inconsiderate use and decreasing supply of labour power.

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Introduction

General - challenges of our population structure

A particularly topical subject today is how to support the overall fitness for work of ageing people and encourage them to keep on working. Historically the analysis of the relation of ageing workers and work is nothing new. Now it has become a highly topical and permanent multidisciplinary set of problems due to current distortion of our population structure and problems concerning the use and availability of labour: as the share of ageing people among the active working population is constantly growing, we are facing a loss of labour through retirement and a consequent labour shortage. In Finland, for example, more work forces will exit the labour market in the next few years than enter it (Manninen 2001a). Today the average early retirement age in Finland is 59 (Hakola 2002).

Both the competitiveness of companies and the general well-being will in near future depend largely on the work ability of ageing workers. Another issue with impacts on the national economy is also how fit and healthy the baby boomer generation will retire and enjoy their retirement. Young people should - considering their own interests - be aware of this issue and try to develop work and working communities with a view to keeping ageing workers happy, motivated and willing to keep on working. The growing share of people enjoying social benefits means an accumulating economic burden to be borne by young adults actively involved in working life.

Correct investments on ageing workers are proven profitable. Keeping the oldest workers of a workplace active and working a few years longer may produce annual savings of tens of thousands of euros per worker.

The concept individual-environment interaction is used to refer to the individual role in the environment. This implies that all aspects of behaviour and performance result from the close interaction of the individual and the environment, such as the worker and the working environment. If the skills, abilities and performance of the individual match the environment, the result is high performance, high level of job satisfaction and low stress, while a poor match results in bad performance and high stress levels. For example, if the physical loading of a work situation remains the same from one year to the next and at the same time the workers work ability decreases, the result may be an imbalance of the work load and work ability and further to bad health and absenteeism.

According to the World Health Organization (WHO 1993), there are two main ways to postpone retirement. One is addressed to the workers and the
other to the employees. The employers should change the work tasks to reduce the loading factors involved in the work. The employees, in turn, should maintain their fitness for work by health-promoting activities, such as regular fitness exercise.

Individual workers need to balance between their work experiences and factors tempting them to retire. The situation is generally described using the terms factors pushing and pulling to retirement. Pushing factors include bad health, requirements posed by the work, dissatisfaction with work, lack of recognition and appreciation for one’s contribution, a poor workplace atmosphere and age discrimination, while pulling factors include economic aspects and increased possibilities and freedom.

Both research and training
Thus fitness for work and continuing to work pertains to the entire population and all working communities. Nobody can find this issue irrelevant or consider him- or herself an outsider.

This was also the primary reason for the FourFive project realized during 1999 and 2002. The project covered the entire region of Tampere (Pirkanmaa county), and its purpose was to chart the development needs and objectives of enterprises representing sectors under structural transition with a view to the work ability of their ageing workers, promotion of their fitness for work, continuous learning at the workplace, development of intellectual resources and information acquisition, working community and working environment.

The information gathered during the project were used as a basis for a further project where the observed development needs and objectives of enterprises were addressed by innovative training at the workplace. A particular focus of the further project was on testing the applicability and productification of different training methods and events. This activity was considered to contribute significantly to the human and intellectual resources of the enterprises. In this way the project also helped to ensure the fitness for work and sufficiency of skilled labour in the region of Tampere - Pirkanmaa.

Material and methods

Helping people to cope with transition and changes
Working and acting under conditions of transition and change requires special endurance. For this reason the development and support offered by the research and training activities of the FourFive project was specially addressed to sectors under structural transition, such as the textile and clothing sector, the shoe and leather sector, the building sector, the building services sector and public transportation. In other words, the target group of the project was mainly Pirkanmaa county -based enterprises representing these sectors and their personnel. For reference purposes, the target group also included the
expert services sector, which is known to be a predominantly white-collar sector.

The project was divided into three operational phases: sector chartings (n=263, n=322), company-specific (n=31) and personal (n=646) chartings of human resources and work ability indices with related training and feedback sessions, as well as complementary analyses among the personnel in six different enterprises (n=393, n=72).

The questionnaires used in the sector chartings were developed in workgroups with representatives of different sectors. The workgroup had members representing employees and managers as well as employee and employer organizations.

The results of the sector chartings and chartings of human resources and work ability indices were utilized and presented to the personnel of the companies in feedback and training sessions at workplaces; a total of almost 300 sessions were arranged at the workplaces during three years. Besides company management and persons elected to positions of trust the sessions were attended by the ageing workers (over 40 years) representing the target group. The implementers of the summarized the main results and development ideas concerning each enterprise and work organization into a set of 32 transparencies, which was handed over to the manager after an in-house training session for future use and development of the company. In general both the management and the employers had a favourable attitude towards the human resources and work ability index charting and were highly interested in the arranged feedback and training sessions and the development ideas brought forth during the sessions.

The starting points, realization and results of the project are described in more detail in previously published articles and reports (Manninen 1999a, b, Manninen 2000a, b, Manninen 2001a, b, c, Manninen and Talonen 2001, Manninen 2002, Manninen et al 2002).

A visible and audible project

Besides numerous training and feedback sessions the project also applied the principle of greatest possible openness and transparence. The project published its own tabloid newspaper and a poster publication. It also maintained and updated its own web pages where it provided information on topical events and reported on the progress of the project phases, obtained results and workgroup and steering group meetings. At present, a total of 48 bulletins and 7 scientific articles in a foreign language have been published or broadcast in newspapers, periodicals, radio and television.

Owing to its transparent nature and its multiple reflected and accumulated effects the project is estimated to have reached a total of approx. ten thousand people living in the region of Tampere-Pirkanmaa.
Results

The main results are presented in terms of percentages, averages, total scores, averages and cross-tabulated percentages in attached figures (Figures 1-9). The significance of results was tested by the chi-square test.

Problems in the use of labour

The results showed that the age of the oldest workers varied between small enterprises more than between bigger enterprises, in other words, in bigger enterprises the oldest workers were of about the same age. On the other hand, age structure also reflected the age of the company: the older the company, the older the staff.

The oldest senior workers were found in the public transportation sector (mean age 58.3 years) and the youngest senior workers in the building sector (mean age 51.8 years). In the shoe and leather sector the oldest workers were on average 57.4 years of age, in the expert services sector 56.7 years, in the textile and clothing sector 5.6 years and in the building services sector 54.7 years.

In all sectors the age structure of the personnel (ageing of employees) was thought to affect the operation of the enterprise in near future more often in bigger enterprises of more than 20 employees than in smaller enterprises of 1-19 employees (Fig. 1). In the textile and clothing sector as many as 82 % of the managers and 72 % of the employees of bigger enterprises believed the age structure to affect the operation of the workplace.
Despite the recognized adverse effects of the age structure, most enterprises in these sectors had not taken any special measures to maintain and promote the work ability of the ageing workers (Fig. 2). This was particularly true of small enterprises.
A finding of special interest with a view to finding a quick remedy to the situation is that the willingness of the seniors to keep working depends on whether special measures to promote the work ability of ageing workers have been taken at the workplace or not. For instance, in the textile and clothing sector in small enterprises of 1-19 employees 77 % and in bigger enterprises of more than 20 employees 65 % of the oldest workers at the workplace were willing to continue working until the official retirement age of 65 if the enterprise had taken special measures to promote the work ability of ageing workers (see also Manninen 2002).

More meaningful work

Money proved a poor incentive for keeping ageing employees active in the working life. A rise of a few tens of euros in the salary or retirement pension is not enough to induce people to continue working. The meaningfulness of work, on the other hand, was perceived an important incentive in getting ageing workers to continue working. Economic incentives were rated more important than meaningful work only by 3-7 % of the respondents (Fig. 3).
Most respondents thought that the system of wages and rewards should be changed. In their opinion, this could be achieved by lighter income taxes, increasing the accumulation of pension in later working years, bonus systems and a number of other similar incentives and free vacations.

The main reason for keeping ageing workers motivated was generally stated to be keeping their know-how available in the company and thus ensuring the continuity of the operation. It was also believed that the quality of products and productivity would improve this way. Other benefits were seen in a more positive workplace atmosphere, less absenteeism and improved working conditions. Only a few respondents stated that they did not find any benefit in the utilization of the know-how of ageing workers and it had no effect on the workplace (Fig. 4).
Focus on mental and physical endurance

In all sectors mental endurance, workplace atmosphere and management were the three most acute desirable areas to be developed in the workplace. Wage system was also considered important.

About every second respondent found the most acute development needs in companies to be related to promoting the mental and physical endurance of the personnel (Fig. 5a, Fig. 5b).
Fig. 5a. Things to be influenced on at the workplace, by sectors

- Mental endurance
- Waging
- More positive attitudes
- Information flow/availability
- Physical endurance
- Cooperation
- Human relations at workplace
- Leadership
- Fact-oriented management
- Pleasant environment
- Facing changes

Legend:
- Textile and clothing sector (n=300)
- Shoe and leather sector (n=164)
- Building services sector (n=95)
- Expert services (n=50)
Fig. 5b. Things to be influenced at workplaces, by sectors

- Ergonomics of work
- Working hours (flexi-time, part-time)
- Safety of work
- Recovery exercise during breaks
- Future goals/company visions
- Training opportunities
- Setting one's own goals for work
- Sick leaves
- Healthy habits
- Career promotion
- Other factor

Legend:
- Textile and clothing sector (n=300)
- Shoe and leather sector (n=164)
- Building services sector (n=95)
- Expert services (n=50)
In particular those respondents who deemed it necessary to pay more attention to mental endurance of personnel also wanted to draw attention to physical endurance.

Those ageing workers who did not find it necessary to pay more attention to mental endurance, nevertheless called for the development of management related issues (facing changes, vision of future, fact-oriented management, leadership and wage system) as well as factors affecting the workplace atmosphere (human relations at the workplace, more positive attitudes, availability and free flow of information, cooperation).

**Most workers have symptoms**

In all work organizations most symptoms occurred in the neck-shoulder region and back-shoulder region. No significant differences in these symptoms were found between the work organizations. Women had significantly more symptoms than men. Even 80.4 % of the female subjects reported having experienced symptoms of the upper extremities during the last year.

Those who reported more symptoms on the back-neck-shoulder area wished to draw attention to mental workloads at their workplace more frequently than those with less symptoms. Among those who did both fitness and physical exercise connected to their daily activities at least once a week had less symptoms (at the back-neck-shoulder region) than those who did physical exercise never or infrequently.

Musculo-skeletal symptoms were very common among both office and production workers. Injuries established by a physician usually occurred in upper limbs and musculo-skeletal disorders usually occurred in the upper back, cervical spine, lower back or as a degenerative arthritis in limbs and recurrent pain. Hypertension was the most common circulatory disease established by a physician.

Work-related resources were estimated in terms of success in work, support and help received from a superior, relations between work mates, and own readiness to contribute to the work during next 1-2 years. A generous half (57 %) of the ageing workers in the shoe and leather companies had plenty of such work-related resources, while only one third (32 %) of the ageing workers in the expert services sectors had plenty of them. Among the ageing workers in the textile and clothing companies and the building services work organizations about half had little and half had plenty of work-related resources.

The experiences of ageing workers of the support and help received from a superior varied considerably between sectors. For example, in the expert services work organizations support and help was received considerably less than in the shoe and leather companies. The best relations between work mates, in turn, were found in the building services companies while the poorest were found in work organizations representing expert services. Ageing
workers had the least readiness to contribute to the work in the building services companies and most readiness in the shoe and leather companies.

**Satisfaction with life keeps people going**

Besides the meaningfulness of the work and endurance promoting measures carried out in enterprises, peoples own estimates on their retirement age were affected by the general satisfaction with life. Among those satisfied with their life as many as 77 % believed that they would continue working full-time in their present occupation at least till the age of 60 and beyond (Fig. 6). One half of those not satisfied with their life thought to be able to continue in their present occupation till the age of 60 or beyond.

![Fig. 6. Present satisfaction with life and estimate on continuing work (all sectors)](image)

Regarding different areas of life, the respondents were generally most satisfied with their housing. The next highest satisfaction levels were recorded for family life, life in general and other human relations. The respondents were generally least satisfied with their mental balance, economic situation, work situation and health status. The overall scores of the satisfaction indicators concerning different aspects of life showed that 60 % of the ageing workers in both the textile and clothing companies and the shoe and leather companies and 40 % of the ageing workers in the building services companies and expert services companies were satisfied with their life. Correspondingly, 22 % of the ageing workers were not satisfied with their life in the work organizations of the building services sector and expert services, 17 % were not satisfied with their life in companies representing the textile and clothing sector and 13 % were not satisfied with their life in the companies of the shoe and leather sector.
School at the workplace

The respondents were unanimous that the most important areas of information and topics to be covered by training were, on one hand, age and mental endurance, and, on the other hand, age and physical endurance as well as ergonomics.

In all sectors, in-house learning at the very workplace was regarded as the most effective and suitable form of face-to-face training and information dissemination. The respondents wished that school would come to the workplace. The significance of communication and demonstrations was also emphasized and preferred to private studies, distance learning based on information networks (including internet) and training arranged in educational institutions (Fig. 7).

![Fig. 7. Most desirable ways to provide information and training related to ageing](image)

Our findings further revealed that in general the personnel of small productive enterprises were particularly interested in such training events that involved outdoor activities in natural surroundings and with adventuring activities. By contrast, training events arranged outside the company during working hours were not found interesting even if they had well-known lecturers and topical subjects.

Regular personnel meetings

Regarding in-house communication, in all of the five sectors, personnel meetings were considered the most suitable communication method for preparing development measures at the workplace. In the work organizations
of the expert services sector both personnel meetings and personnel inquiries were estimated to be equally suitable methods of communication (Fig. 8).
Fig. 8. Suitability of different means to create cooperation by sectors (means considered most suitable by respondents)

- Personnel meeting
- Quality team
- Cell meeting
- Personnel inquiry
- Management inspection
- Initiative box
- Bulletin board
On the other hand, the bulletin board was rated the least suitable means of internal communication in the companies representing the shoe and leather sector, textile and clothing sector, the building sector and the expert services sector. In public transportation cell meetings and quality teams were seen as the least suitable means of communication, while management inspection was found to be the least suitable in the building services sector.

The respondents generally found conventional media such as newspapers, radio and television most suitable external media in the development of everyday work and production environments. Less suitable media, in turn, included applications representing the so-called new ICT such as multimedia, information networks (internet) and video.

Exercise during breaks keeps you going

A majority (90 %) of the workers who did exercise during breaks at the workplace reported that such active recovery breaks helped them to keep working (Fig. 9).

The experienced relief provided by exercise during breaks was equally significant during both production and office workers. Especially older persons (over 45 year-old) reported active recovery breaks to help them keep working more often than younger workers (under 45 year-old).

The most popular forms of exercise during breaks in which the respondents were interested in participating or carrying out independently at the workplace.
were stretching (70 %) and relaxation (54 %) mainly aimed at reducing muscular tension. The third most popular form was gymnastic exercises with or without equipment (51 %).

Half of the respondents wished daily exercise during breaks. Half preferred recreational and exercise events during working hours. A majority of the respondents (60 %) also wished to receive training related to this issue during working hours.

*Permanent effects on the scientific community and the working life*

In the foregoing we have discussed a few results of the project and experiences received from the project. In addition to diverse new practical information and innovative education, the FourFive project established permanent international cooperation between experts in the field. One subject of interest in the cooperation will be "Ageing people and work life", which was also the theme of two international expert meetings arranged in Finland, in 2001 in the city of Valkeakoski and in 2002 in Tampere. The third expert meeting will be held during 1-4 October 2003 in Japan. The project also involved organizing an international scientific advisor committee to support the interdisciplinary operation of the newly established Institute for the High Ability of Work Organizations of the University of Tampere focusing on ageing and work life.

The project also included comparative studies that were started in Japan, in the Ishikawa area, in November of 2002, which also utilized the results, experiences and developed indicators and scales of the FourFive project. Similar comparative studies will in addition to Japan be extended to Hungary. The cooperation partners expect the comparative international research projects to provide some new approaches to the development of work organizations.

From the point of view of the development of companies and work life the main accomplishments of the project include the development of a new type of interactive in-house training method for the personnel of small and medium-sized enterprises, the creation of a systematic two-phase and generizable inventory taking method for detecting the development needs of different work organizations, launching of new types of break and recovery activities at workplaces, identification of factors that motivate and increase the ageing workers to continue working, making this kind of project activities permanent with a view to life-long and work career thinking, and the establishment of the Institute for the High Ability of Work Organizations of the University of Tampere; this is a multidisciplinary institute with a new type of operation philosophy. In this connection, a professorship for the high ability of work organizations was also established.

*Conclusions*
In general, coping with various work tasks depends not only on individual factors but also on many organizational and concrete work-related and work environment related factors: by performing the work wrong under poor circumstances, we can accelerate and by performing the work right under good circumstances we can slow down the weakening of our work ability to work and overall performance.

From the point of view of the entire educational system, it is especially interesting that most people in the companies of different sectors wished to receive face to face training at the workplaces during working hours. Notwithstanding the commonly accepted tendency presented in discussions concerning the information society, information networks are generally shunned at production workplaces and are used very little in the acquisition of information. The results correspond to our previous results (Manninen et al 1998) from metalworking, building and service station enterprises in Central Finland. Most managers (70 %) considered information networks (for example the Internet) a good thing but did not perceive them very helpful in the development of the company.

Regarding training and optimal utilization of new knowledge the situation poses many interesting challenges. First of all, arranging training at the workplace instead of educational institutions requires developing relevant training materials and methods for the people at workplaces of various sizes. In the future the development of training methods should indeed proceed with in-house training at the workplace as a starting point.

This is undeniably a big thing with a view to national and business economy. It poses great challenges to multidisciplinary research and education. It also requires more unprejudiced thinking and cooperation between the representatives of the traditional fields and schools of health science, engineering science and economics. Ergonomics and medical methods help reduce symptoms, but not completely, if interaction and communication in the work organization does not work or management styles are experienced as problematic. This shows that the work organization must be perceived as an entity where different factors combine and interact.

In the light of the experiences and knowledge gained from the project, in the future it will be of central importance to find out how to combine the endurance of the personnel of companies and work organizations and business profits in a new way. Especially important it is to know how to make the managers of small companies to see their company and its operation from this perspective.

To maintain people’s endurance and postpone their retirement, incentive activities differing radically from present monetary incentives should also be tested in the future. They could become a part of the constant improvement of work organizations. Incentive activities could be customized to reflect the different needs, demands and values that people are known to have at
different phases of life. The starting point for this innovation is our finding that people are the more willing to continue working, the more young and energetic they subjectively feel, the more satisfied they are with their life and the more meaningful they find their work. Willingness to continue working may increase even more if people at work organizations learn how to launch recovery activities during breaks that will inspire and bring joy to the employees.

To promote people’s overall fitness for work and improve their performance ability in the future, it is also important to know how different factors at the workplace influence each other, which combined effects of work-environment related factors should be utilized and which should be prevented altogether.

To meet the various challenges posed by ageing in the future, we need, besides interdisciplinary research and in-house training, genuine interest in the operation of (especially small) enterprises, wide-ranging knowledge of work life, long-term life-cycle and career thinking, innovation of procedures in work organizations, new kind of cooperation across traditional boundaries between people at workplaces, authorities and experts, more holistic visions, more high-quality information, as well as openness, mutual trust, interaction, appreciation, respect and consideration to each other.

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References

• Manninen O (1999a, b) Keinot edistää ikääntyvien työkuntoisuutta ja työssä jaksamista. Osa I ja Osa II. AKAVA, SAK, STTK Pirkanmaa 5:20-23 ja 6:26-29 (in Finnish)
• Manninen O (2000b) Means to promote the fitness for work and job satisfaction of older workers. Arch Complex Environ Studies 12(3-4):51-57
• Manninen O (2001c) 45+ Ageing and work life. Tampereen yliopiston Liiketaloudellinen tutkimuskeskus. Raportteja/Reports. Tampere 20.08.2001
• Manninen O (2002) The productive work force issue calls for new combined actions. Arch Complex Environ Studies 14(3-4) cdrom

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