

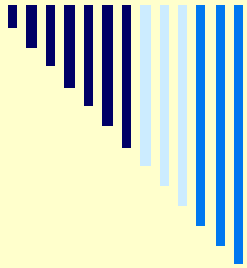
Models and measures for elderly work ability enhancement

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Structure

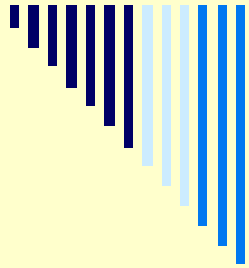
1. Introduction
2. Methods
3. Results
4. Discussion

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IAS Stiftung

OASIS First International Conference
4-5 November 2009



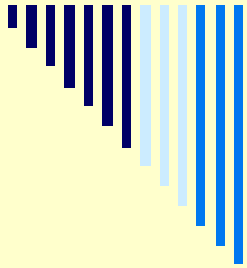
Research action for improving Elderly workers Safety, Productivity, Efficiency and Competence Towards the new working environment



Quality of Life and Management of Living Resources
QLK6-CT-2000-00038

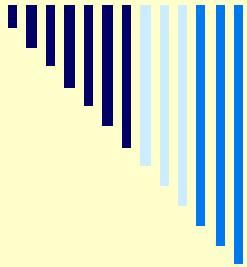


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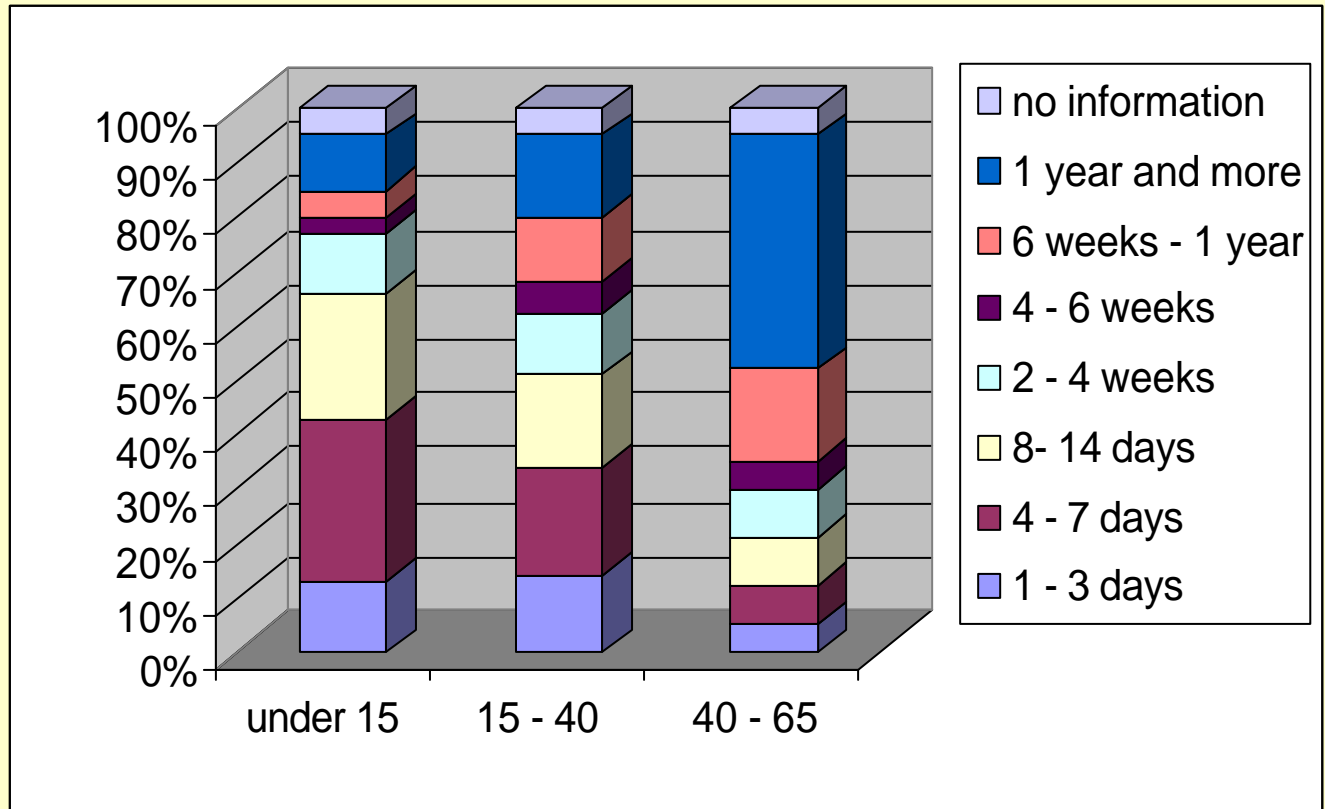
Background and aim of this study

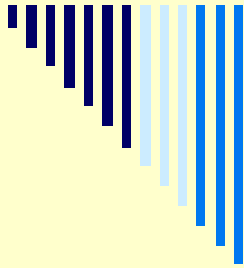
- The active participation in work-life is a primary requisite to ensure well-being
- Low respect for ageing workers has been shown as a recognizable trend in recent years
- It is very important to know how employees assess their working conditions and their own work ability
- The aim is the promotion of health, work ability as well as satisfaction of ageing employees



Sickness absence and ageing

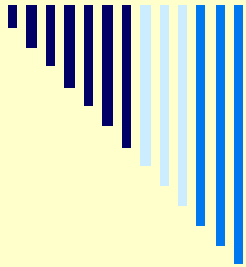
(duration of illness or accident injury)



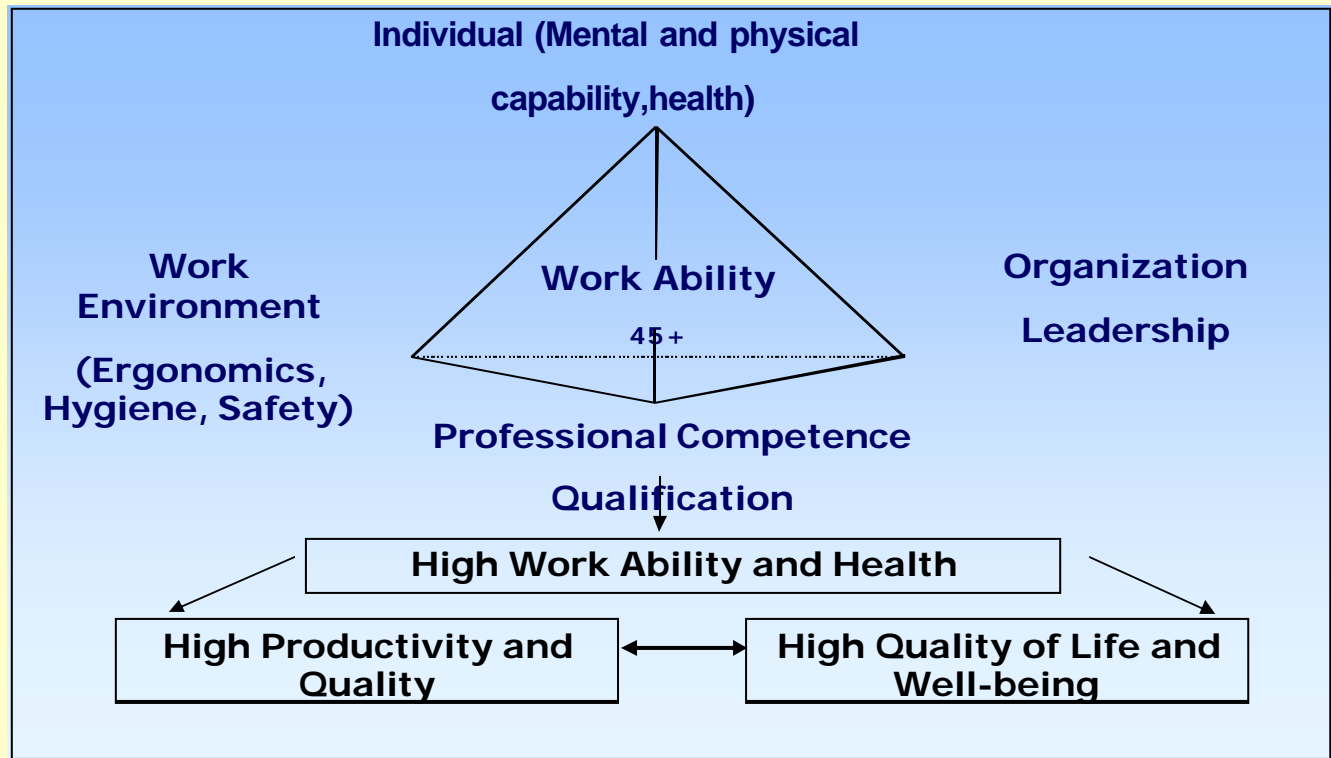


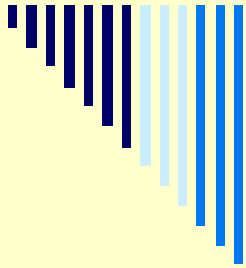
Key problems of elderly workers

Society level	Public relations
Management level	Leadership Recruitment policy Personnel development Change of company culture Attitude
Process level	Working time Project work Job arrangements (age-ergonomics)
Individual level	Use of expert knowledge Speed performances Motivation Attitude Health



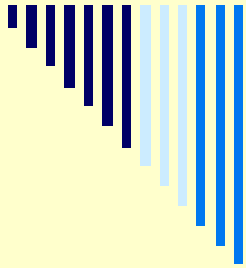
Work ability by Ilmarinen et al.



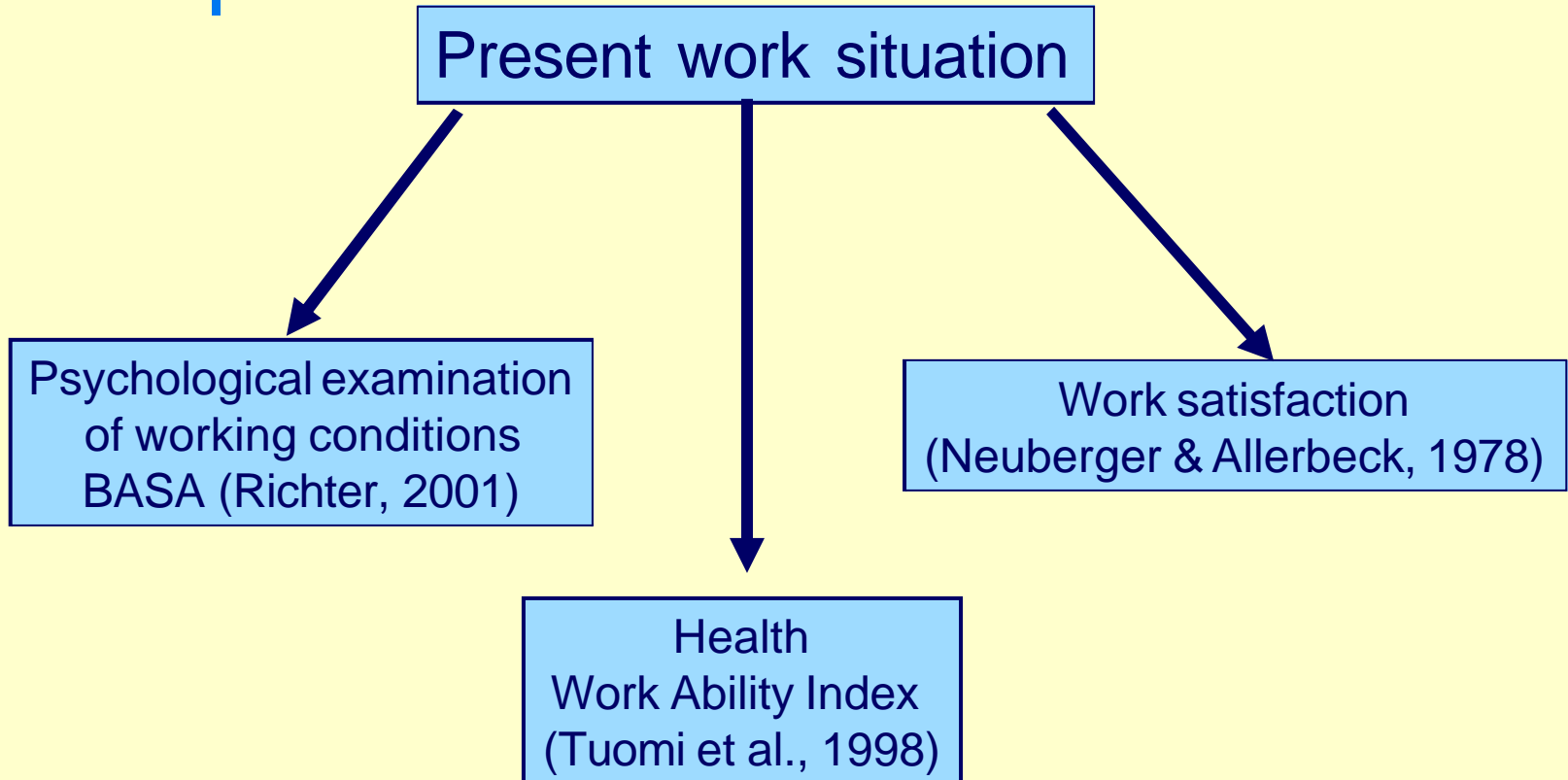


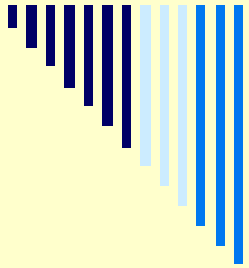
Design of investigation

<i>level of investigation</i>	<i>random sample</i>	<i>method</i>
management level	Top manager personnel manager works committee company doctor safety engineer	Interview
process-/ work system level	executive / superior	Questionnaire
individual level	employees	Questionnaire



Investigation fields and methods





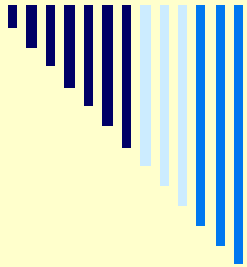
Work ability index (WAI)

Investigation tool for health protection

- Physical and mental demands of work
- Health state
- Performance reserves of the employees

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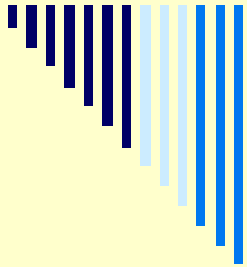


Psychological Evaluation of Working Conditions – Screening for Employees / BASA

Ergonomics / Occupational Safety

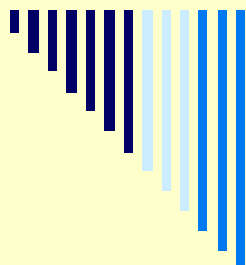
- Body posture
- Accidents
- Technology
- Working tools and aids
- Video display units
- Organization
- Working time
- Social relations





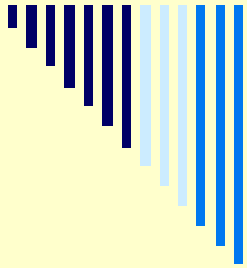
Experimental design - Individual level

	A	B	C	D	E	F
Branch	electronic	employees unions	furniture	electronic	construction	care
Size	medium	large	medium	medium	medium	large
participants	135	40	42	6	16	128
Age mean	44	45	46.6	40.2	41.5	
< 45 years	62	15	12	4	8	88
>= 45 years	71	25	29	2	3	21



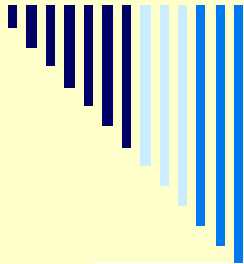
Company levels, research foci, and new working models

Action field	Research focus	New work model
Leadership	Corporate culture	<ul style="list-style-type: none"> • information for managers • <i>Age-awareness seminar for managers</i>
Organization	Flexibility Goal orientation	<ul style="list-style-type: none"> • Shift system designed according to ergonomic recommendations • <i>Short breaks</i>
Ergonomics Occupational safety	Capability Work satisfaction	<ul style="list-style-type: none"> • <i>Work place design and improvement of the work environment.</i>
Professional competence, qualification	Life long learning Team work	<ul style="list-style-type: none"> • Intergenerational teams • X% Job • Vocational training schemes
Individual health responsibility Health programs	Health	<ul style="list-style-type: none"> • <i>Health management</i> • Training of particular muscles and instruction about correct lifting and handling of heavy weights

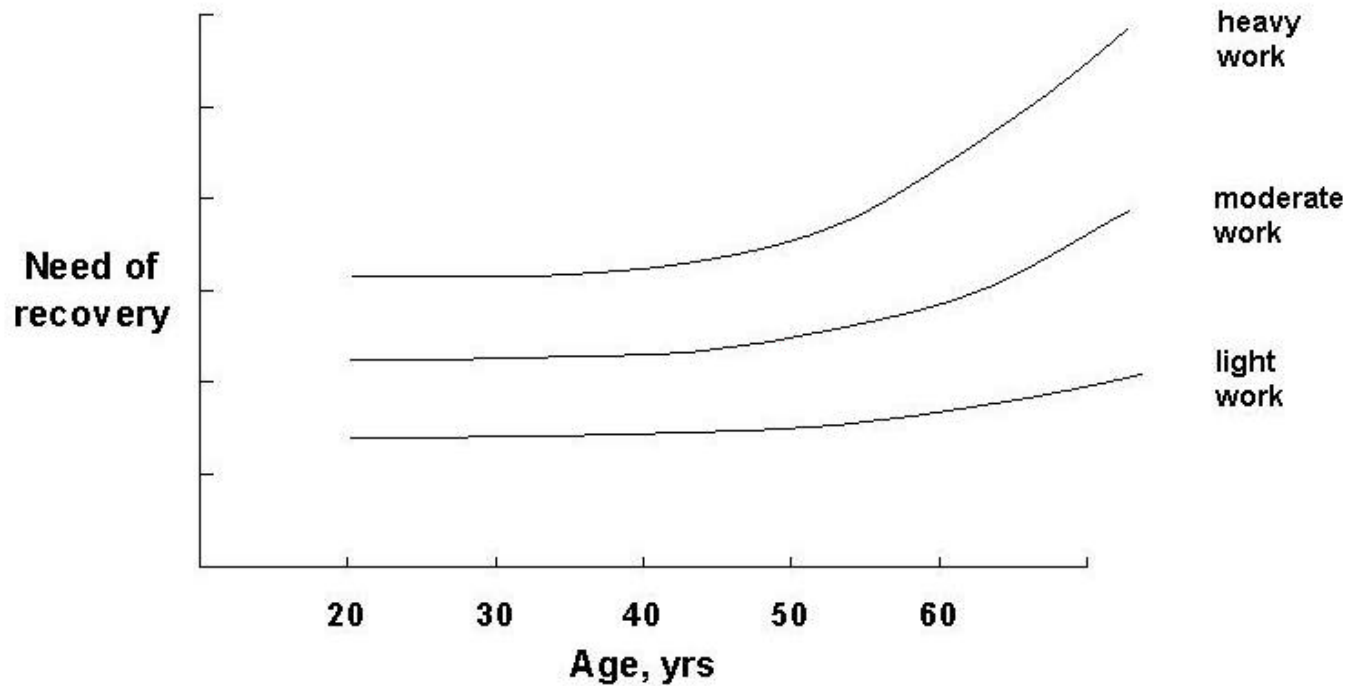


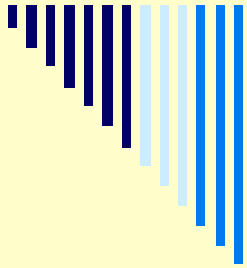
Content of the age-awareness seminar for managers

- Sensitisation of the manager itself
- age structure of the company/department
- facts about the demographic development
- facts about performance, strengths and weaknesses of older (elderly) workers
- experiences with new models for older(elderly) workers in other companies
- evaluation of measures for older workers existing in the own company
- development of new models and planning of their realisation.



Short breaks - need for recovery by age and heaviness of work





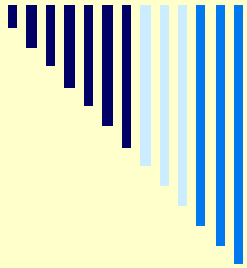
Effects of short breaks

Short breaks can help to:

- avoid an inadequate increase in fatigue
- increase performance
- maintain an adequate level of vigilance
- avoid faults and accidents
- use time for food intake
- do some compensatory physical exercise
- use the time for private communication.

E.g. 3 extra short breaks of 10 min each earlier in the shift instead of 30 min at the end.

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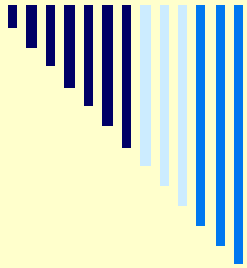


„X% job“ and the „intergenerational teams“ model

- The „X% job“ model builds up the experience and knowledge of employees in fields outside their own function within a previously defined framework
- Advanced professionals are treated as learners
- The „intergenerational teams“ model deliberately promotes cooperation between younger and more experienced employees within a project team
- Each generation profits by the specific expertise of other generations

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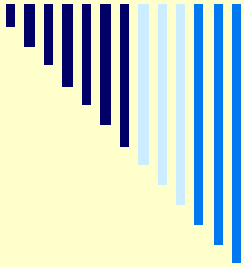


Age-related workplace design and improvement of the work environment

- The ergonomic design of workplaces is a preventive measure that is necessary not only for elderly workers but also for younger ones to enable those to cope with a longer working life.
- There are several age related physiological and psychological changes which have to be taken into consideration when designing workplaces.
- A work analysis must cover the entire work system including leadership, colleagues, dependence on the whole production process, systems of qualification and others

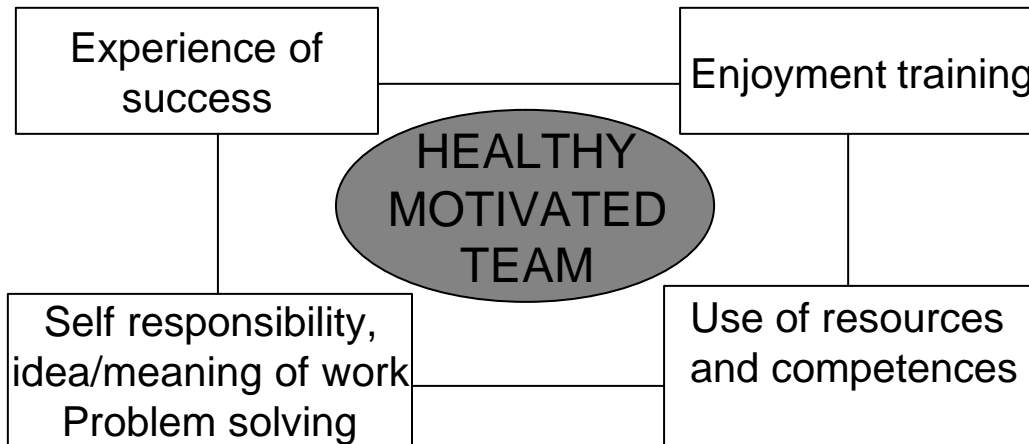
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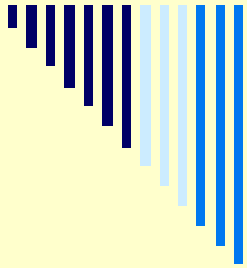


Healthy motivated team

The model is related to the working environment and the individual. Best working conditions will be reached for elderly workers as well as for younger ones regarding their work life in a company.



To emphasize the enjoyment of life and positive emotions in the sense of well being and satisfaction within a motivated team.



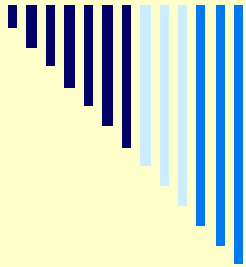
Healthy motivated team

Goals of the model “Healthy motivated team”

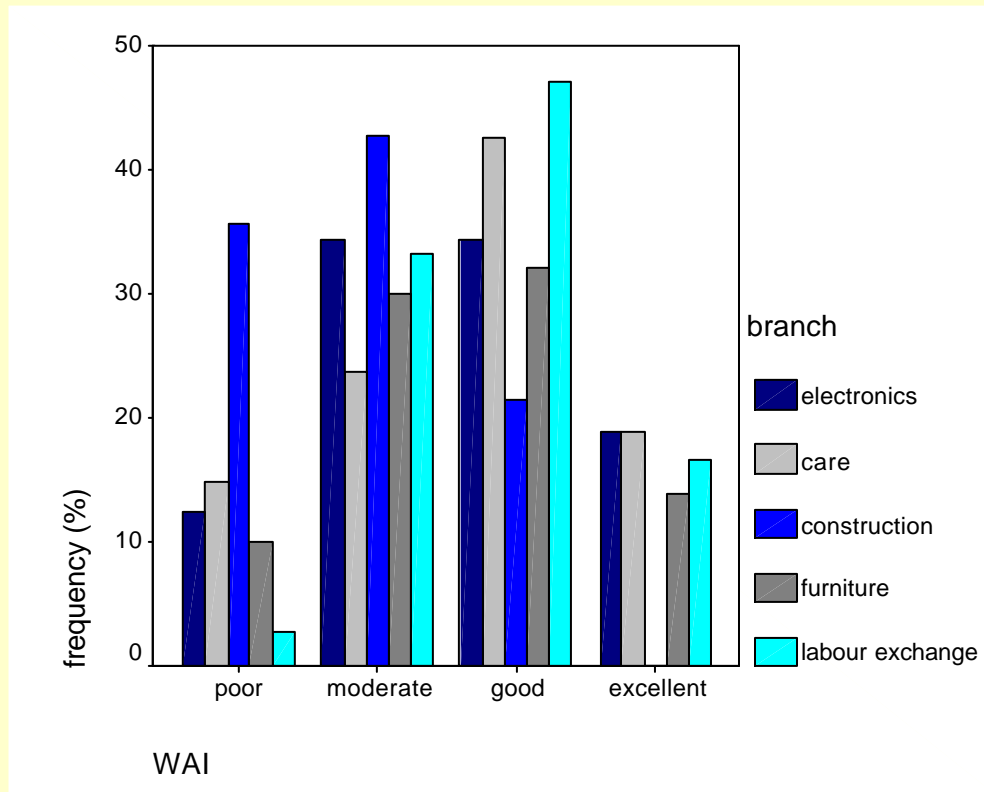
- to support physical and psychological health
- to preserve work ability
- to prevent workers from burning out
- to promote self-responsibility and problem solving
- to use resources and competences as well as the rich experiences of elderly employees (younger and older employees together)

A healthy team can be formed by workers who see usefulness in what they do, who set themselves goals and pursue them.

? The model was tested in the nursing industry



Differences concerning the work ability index (WAI) of the branches



Work ability index

- Poorest values at the construction branch
- Lowest level of working conditions
- Best results at the branch of care
- At elderly employees poorer WAI

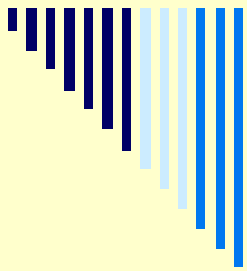
$$F(4;132) = 4.84, p < .001$$

Differences of the job satisfaction in different branches

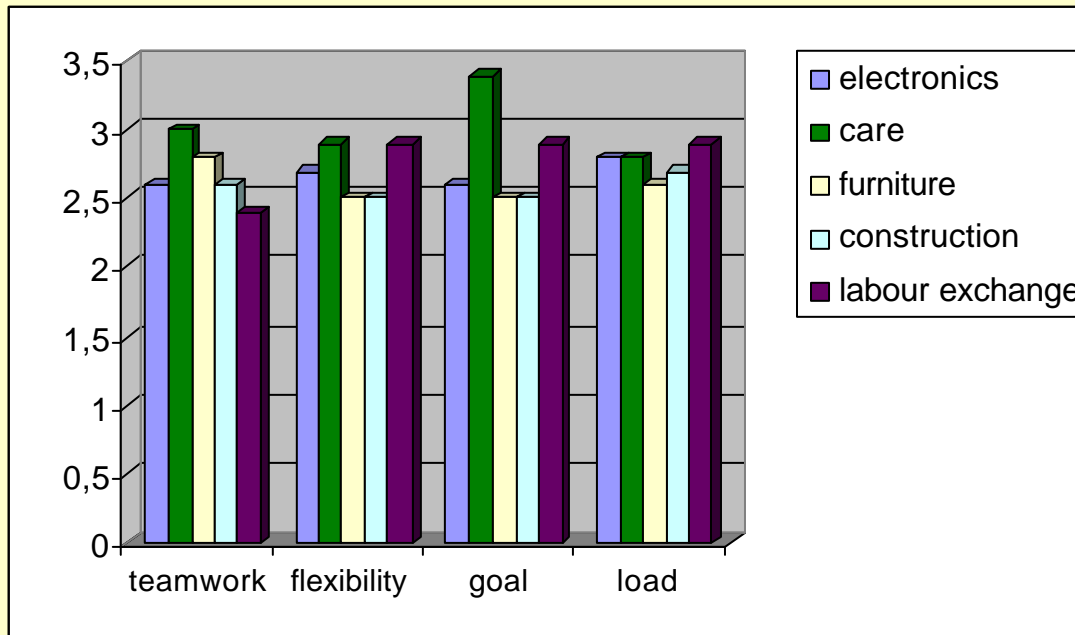
Job satisfaction

- Lowest values at the electronic branch which correlates with the insufficient level of work place design
- Elderly employees were more dissatisfied than their younger ones





Differences of teamwork, flexibility, goal orientation and load capacity in various branches



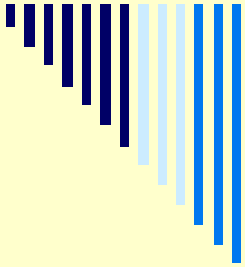
- Poorest results at the electronic and construction branch
- The best results at the branch of care and labour exchange
- Younger employees assessed their flexibility higher than their elderly colleagues.

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Correlation matrix

	1	2	3	4	5	6	7	8	9
1 Age									
2 Technique	-.034 N =241								
3 Organisation	-.089 N =334	.326 ** N = 251							
4 Ergonomics	.078 N = 248	.195** N = 251	.383** N = 258						
5 Satisfaction	-.020 N = 317	.302** N = 231	.566** N = 330	.417** N = 235					
6 Load	-.091 N = 332	.072 N = 249	.019 N = 348	.181** N = 253	.100 N = 335				
7 Team ability	-.079 N = 328	.072 N = 249	.145** N = 351	-.005 N = 255	.227** N = 327	-.088 N = 345			
8 Flexibility	-.176** N = 337	-.008 N = 250	.026 N = 355	.233** N = 256	.057 N = 336	.417** N = 353	.096 N = 349		
9 Goal	-.165** N = 331	.149* N = 248	.205** N = 348	.247** N = 250	.253** N = 330	.203** N = 348	.261** N = 343	.343** N = 352	
10 WAI	-.124* N = 340	.025 N =246	.241** N = 334	.376** N = 253	.187** N = 317	.187** N = 335	.031 N = 329	.228** N = 338	.172** N = 331

- A higher age is correlated with a lower flexibility, a lower goal orientation and a poorer WAI.
- The WAI is positively correlated with the items organization, ergonomics, job satisfaction, load capacity, flexibility and goal orientation.



Conclusions

- Demographic change should be recognised all over Europe as one of the continent wide challenges of the future.
- Human being as the most important resource should be obtained as long as possible,
- Younger and older employees should be motivated and promoted at the same time– the younger ones from today are the older ones from tomorrow.

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IAS Stifut

OASIS 45th International Conference
OASIS First International Conference
4-5 November
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