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**The possibilities for applying the competence management-based human resources management model of the competitive sector in the public sector**

**(Age management techniques for ageing employee groups)**

Theses of doctoral (PhD) paper

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## **Currency of the topic, reasons for the choice of topic**

Human resources management has been an exciting professional challenge for me, ever since I have had the opportunity to start working in this field as an active professional 20 years ago. I have been managing HR departments of Hungarian and international corporations working in various industries and with various sizes since 2001. The choice of this topic was evident for me because in the course of my professional career, I have always been interested in figuring out which of the various human resources management (HRM) models used in the competitive sector may be applied successfully in public service as well. In my opinion, the topic presented in this paper and supported by research - that is, age management techniques that may be applied for ageing employee groups - will prove to be a key area in relation to the enhancement of corporate efficiency, commitment, and knowledge management development between employee age groups in the coming years.

Ageing has commenced in Europe decades ago, and proved to be a long-term trend. It may be observed in the transformation of the population's age structure, and is reflected by the increasing proportion of the elderly. At the same time, the total population shows a decreasing trend in spite of the increase in age. In Hungary, according to the outcome of the 2015 projection by the Hungarian Demographic Research Institute of the Hungarian Central Statistical Office, Hungary's population is expected to be 7,900,000 in 2060; the high version indicates a population of 8,700,000, while the low version projects 6,700,000<sup>1</sup>. As a result of this, the active population of working age is expected to decrease, threatening the availability of labour force. Therefore, ageing poses a serious challenge for health care services, economic growth and for funding social welfare systems.<sup>2</sup>The policy on the elderly can be found in the various strategies in European countries including Hungary.

In most of the cases, the dominant elements of these strategies are the same, and reflect on the various policies. In the case at hand, however, employment of the elderly is not given sufficient emphasis within the potential labour reserve when it comes to employment policy and strategy.

In recent years, government measures have tried to promote the possibilities for re-employing those of retirement age, but there is no significant breakthrough in place in this respect yet.

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<sup>1</sup> <http://demografia.hu/hu/tudastar/nepesseg-eloreszamitas> Downloaded on: 28 January 2018

<sup>2</sup> According to the Randstad Flexibility@Work 2015 study, the reduction of the population of working age may lead to a serious shortage of labour, and pensions are predicted to consume 15 per cent of European GDP by 2050.

From a social and policy perspective, older employees form an important part of the labour force of modern societies, and their number is set to increase in the coming decades. Elderly employees have different skills and abilities than other generations do. Without them, we would have to face a shortage of professionals and the insufficiency of structural and network building capacities. At the same time, it is important to pass on tacit knowledge to younger generations. The strongest combination of workplace competences is based on the different strengths of the different generations. The better health condition and life expectancy of elder employees improves their possibilities for enriching an age-friendly society.

However, a good life spent working is an important prerequisite for elderly employees remaining active, allowing society to benefit from their strengths and talents. In the course of this, they may play an active role in building a sustainable and caring society where solidarity exists between generations, and a productive life spent working is an important starting point for an active old age. Satisfactory employment may help to avoid illnesses as well as physical and mental deterioration, ensures a good cognitive and physical condition, and promotes the development of positive and active attitudes to life. The quality of life spent working has a great impact on all employees, given the great amount of time spent at the workplace.

According to preliminary information, the ratio of the elderly group within the group of the employed is expected to pick up strength in Hungary, and the ratio of the 55 to 64 age group may reach as much as one quarter of those employed, while the rate of the young is expected to stagnate in the future.<sup>3</sup> It would be particularly important to take this trend into account in order to keep the national economy on a sustainable track.

Following the monetary and economic crisis of 2009, employment policy and the labour market have been transformed and are shifting towards competitiveness, even though segmentation is still significant in the labour market. An increase in demand for labour can be demonstrated to be significant in respect of human resources (labour force) in the labour markets, the positive balance of which has been provided by the developing economy, globalisation and mobility (employment migration).

The structural changes in the economy and the labour market considerably influence the distribution of employment in all fields of economic activities. Demand for labour is strongly influenced also by factors independent from supply. The expected level of employment is determined by processes that work in opposite directions throughout the entirety of the national economy.

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<sup>3</sup>Tardos, K. (2017): *Életkor és esélyegyenlőség*. (Age and equal opportunities) mtd Tanácsadói Közösség – Belvedere Meridionale Budapest - Szeged, 2017. p.55

One of the most important influencing factors will be the effect of technical and technological evolution that will squash labour head count (robotisation, widespread application of artificial intelligence in several fields of industry and services). Consequently, ensuring the balance of demand and supply and the acquisition of competitive knowledge may be specified as a priority. The new industrial boom presents additional challenges to employers and employees. According to the World Economic Forum, the TOP 10 skills will be the following by 2020: 1. Complex problem solving, 2. Critical thinking, 3. Creativity, 4. Leadership skills, 5. Coordination skills, 6. Emotional intelligence, 7. Judgment and decisiveness, 8. Service orientation, 9. Negotiation skills, 10. Cognitive flexibility.<sup>4</sup>In addition to a number of factors, these competences will determine how demand and supply will turn out in the labour market.

Over the course of the past ten years, the public sector has seen significant changes and developments. The basis for the transformation and continuous evolution/change of the public administration system consisted of the Magyar Program and the Public Administration and Public Service Development Strategy 2014-2020. The strategic goal of the Magyar Program<sup>5</sup> is to enhance the efficiency of government operation, and the standard of public services: to create an efficient national public administration. Within this strategic goal, efficiency is a dominant factor, the components of which include efficacy, economies, effectiveness, safety, the possibility of supervision and adaptation (development). The fundamental point of the strategy leading up to 2020 is that in addition to the operators of the competitive sector, public administration should also be considered an operator to actively shape competitiveness. Economic competitiveness may be improved by renewing public administration. The criteria set by standards for transparency, integrity and accountability need to be provided at a high standard in public administration, thereby contributing to the enhancement of competitiveness.

Human resources development is determined by a knowledge-based society and economy. A knowledge-based society is based on knowledge, information, and the possibility of acquiring them. Consequently, according to the theory of a knowledge-based society as information society, the production, distribution, dissemination, use and management of information in a society is a significant economic, political and cultural activity. Knowledge-

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<sup>4</sup> <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial> Downloaded on: 28 January 2018

<sup>5</sup>Magyar Zoltán Public Administration Development Programme (MP 11.0) For the salvation of the nation and in the service of the public, Ministry of Public Administration and Justice, Budapest, <http://magaryprogram.kormany.hu/>

based economy means an economic structure in which the production, distribution and utilisation of knowledge-intensive goods and services plays a dominant role.

Both are based on lifelong learning and training, which also means training the labour force in order to adapt to the needs of the economy, thereby contributing to sustainable economic growth, as well as to ensuring equal opportunities in society.<sup>6</sup>

There are considerable overlaps between and highly similar methodologies in the management concepts, structures and techniques related to human resources, which have been developed (and have evolved) in the competitive sector and in public service. In my opinion, the number of similarities is greater than the number of differences in respect of the key issues of human resources management (retaining the workforce, performance management, talent nurturing, etc.), but the possibilities for introducing professional tools, processes and solutions are different. Legal restrictions and regulations are stronger in the field of public service. The change in employment competences, the fourth industrial revolution, and the digital world determine different types of demands in the two fields. The labour market of the 21st market and human resources development require the implementation of new methods. In addition to the dissemination of the age management approach, a complex system is needed in which the various services are coordinated (employment and labour market, health care, welfare, education, cultural aspects) by taking into account the needs and interests of the different generations, of those growing old/the elderly.

Based on my professional experience, strengthening diversity within companies and organisations, which presupposes successful cooperation between the various age groups/generations, may represent a real competitive advantage, but it may be developed only by carefully planned and implemented age management programmes. The research presented in this paper creates these foundations for a state enterprise. It is important to plan ahead for a number of decades in a social dimension, taking into account all demographic trends.

Cooperation between employers, employees, retirees and the state is required, because this is what can create the foundations of a sustainable complex generation and age management programme at society's level.

### **The methodology framework for research**

The general purpose of this paper is to present the social and employment policy necessity in Europe and Hungary, which determines the employment policy of these days, the labour

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<sup>6</sup> Development and Methodology Institute of the State Audit Office (2008): A tudásalapú gazdaság és társadalom (The knowledge-based economy and society), Budapest, pp. 33-36

market in relation to the ageing population, and, as a consequence, HR activities in the field of developing human resources in the competitive sector and in public service. I have been working on this topic for years as a PhD student, and accordingly, have been attending symposia, Hungarian and international conferences, have been studying trade literature, and collecting best practices from within and outside Hungary for this paper.

The specific objective of my research was to present competence management methods used in the competitive sector, with particular attention to age management techniques, primarily the application of the Work Ability Index<sup>7</sup>. Also, to compare the age management techniques applied in the public service and the competitive sectors, to explore opportunities for development, and to formulate the directions of objective ability testing.

As regards empirical research, the Work Ability questionnaire was used to question at least 1,000 (front office) employees of over the age of 45 years. In the course of processing, the outputs in a context of public service conditions were formulated and presented on the basis of the experience yielded by the Work Ability Index.

In the case at hand, compliance with the validity criterion means that primary research has yielded a significant amount of useful information on questions that look at the possibility of applying age management tools, and within that, the Work Ability Index, in public service. Based on the criterion of reliability, no measurement errors occurred due to the careful preparation and representative nature of the survey.

The sample gives an appropriate representation of the employee groups of the given state enterprise in the given jobs. Secondary research is based on Hungarian and international trade literature, international studies and research, supplemented by the analysis and interpretation of online and offline contents.

Empirical research was conducted anonymously, using online and hardcopy questionnaires, with the questioning period taking place between 25 June and 15 September 2018. Answers were given voluntarily, on a self-declaration basis in line with the nature of the questionnaire. The questionnaire was completed by 1,743 persons equivalent to 5.82% of all the enterprise's employees, which is sufficiently representative of the underlying multitude.

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<sup>7</sup>WAI is a tool used in health at work and in research for assessing the ability of employees to work, in the course of health checks and workplace assessments. The purpose of WAI is to assist in the work necessary to maintain and promote work ability. The scoring system of the questionnaire grades work ability, along with the recommended actions for each category. Proper measures may be taken to prevent a reduction of work ability and to increase efficiency in the future.

## Research methods

My research investigates the possibilities for competence management-based human resources management and the application of age management in a complex manner. The research was theoretical on the one hand and practical (applied) on the other hand, with a significant quantitative and qualitative approach. I made use of both secondary research methodology (such as document analysis and literature research) and primary research methodology, by a quantitative and qualitative comparative analysis of the results of a survey conducted on a large sample.<sup>8</sup>

In the framework of the operationalisation process, the terms related to the research (competence management, age management, ageing labour, work ability, employability, development) were rendered measurable. I formulated these elements so that the classification applied after putting the research into operation became measurable with the help of the measurement method or measurement tool (Work Ability Index). In the course of secondary research, document analysis was done by searching for key words, index words, the necessary and sufficient documents were obtained and analysed. Computer data bases and search engines were used. In the course of processing the information, a considerable volume of Hungarian and international trade literature and documents were used, with publications produced by the professionals of the National University of Public Service showing particular merit. The quality elements that characterise HR work in the competitive and the public sectors are formulated in the framework of a cross-case analysis. In addition, comparison is used in looking at the experience with the application of the Work Ability Index in other countries.

The Work Ability Index questionnaire (survey) consisted of a questionnaire survey conducted on a relatively large sample (1,000 persons). For the purposes of analysing the hypotheses, SPSS processing was the most efficient tool - linear regression analysis, correlation analysis, cluster analysis, main component analysis, and other descriptive statistical modelling were used to test the hypothesis.

When determining the target group/age group, the starting point was the OECD principle according to which employees are considered elderly when they have already entered the second half of the years they spend working but have not yet reached retirement age. This corresponds to the research on and the methods applied by the Work Ability Index (WAI), which serves to assess and proactively manage work ability, functional capacity. The turnout of work ability shows a close relationship with the alignment of work conditions to age, in-

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<sup>8</sup> Babbie, E. R. (2008): The practice of social research. Sixth revised edition. Balassi Kiadó, Budapest.

dividual abilities and skills, and to health status, which may arise as early as around the age of 45. It may be said to be general practice to consider the group of employees 10 to 15 before retirement, that is, aged between 55 and 65, who are still working actively, to be the group of employees where it is reasonable to implement conditions of employment linked to age group, structured age management programmes<sup>9</sup>.

According to Hungary's current health at work regulations, employed persons who have "reached the retirement age applicable to them personally" shall be deemed to be elderly employees in the vulnerable group<sup>10</sup>.

New methods need to be implemented and, in addition to the dissemination of the age management approach, a complex system is needed in which the various (employment and labour market, health care, welfare, education and cultural) services are coordinated by taking into account the needs and interests of the ageing and elderly persons.

Setting out a scientific problem: human resources development applies various methodologies covering and relying on certain components of a number of disciplines (management studies, work studies, psychology, pedagogy, andragogy, economics, health sciences, etc.). The purpose of applying these methods is to influence planned staff development, organised learning, corporate culture, to increase competitiveness, and to take into account flexibility and safety, motivation and individual needs. New competences and needs have emerged both in the competitive and the public sector, which have yet to be answered by either of the sectors. The issue encompasses the development and conservation of physical and mental competences, the lack of validation for new skills and abilities, and the fading of health competences into the background.

This paper applied the WAI methodology for corporate research, which is a HRM age management tool that has been implemented and validated in the competitive sector and, in other countries, also in public service. Based on the WAI methodology, the research questions for which answers were sought in respect of an ageing group of employees working for a large state enterprise were:

- Current work ability compared to the best ever work ability
- Work ability from the perspective of the present work requirements

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<sup>9</sup> Szellő, J., Nemeskéri, Zs., Zlatics, J. (2017): Az idősödő korcsoport munkavállalását meghatározó stratégiai tényezők. (Strategic factors determining the employment of the elderly age group) OPUS ET EDUCATIO: Munka és Nevelés 2017/4.

<sup>10</sup>In Hungary, under Act XCIII of 1993 on occupational safety and health, the vulnerable group is the class of employees who are exposed to an increased threat of risks associated with work pursuant to their bodily and mental features or condition, or who represent increased risk in the course of work (such as employees below the legal adult age; women who are pregnant, have recently given birth, produce mother's milk and lactate; the elderly; people with changed work capacity).



- Number of current illnesses
- Estimated impact of illnesses on work
- Own estimate of work ability two years from now
- Mental strength reserve

## Hypotheses

Having opted for the inductive way of creating a hypothesis, I relied primarily on my practical experience gained in human resources management over the past 20 years, while also applying the deductive assumptions stemming from theory when drafting my paper. I set out six hypotheses before carrying out the research, and in conformity with my professional background, I interpreted each of these from the perspective of practical application in human resources management. My hypotheses were as follows:

*H1: I assumed that the average Work Ability Index of the employees taking part in the large-sample survey will be 60% compared to the maximum score in the good and excellent category at the large enterprise surveyed.* (Practical relevance in HR work: 40% of employees fall into the ‘to be developed’ category, which will require the use of special tools in the field of human resources policy).

*H2: I assumed that people with higher education qualifications will have the significantly best WAI results.* (Practical relevance in HR work: if substantiated by research data, it would be reasonable to consider the launch of a higher education dual specialist course at this enterprise, in order to achieve as great an improvement in efficiency as possible with the help of highly qualified labour).

*H3: I assumed that the groups of people with medium and high levels of qualifications who are basically optimistic about the future will be characterised by Work Ability Index values close to the average (people with secondary qualifications) and over the average (people with higher education qualifications).* (Practical relevance in HR work: according to this hypothesis, the Work Ability Index of those who have a vocational qualification obtained only within the given large enterprise and indicate negative prospects for the future will be much lower than the average for the organisation. This can be analysed by a more in-depth analysis of statistical relationships between the research results, by cluster analysis. If the figures substantiate this assumption, the human resources management area needs to elaborate an action plan for this group of employees that helps to modify their negative outlook to positive. The implementation of programmes to increase employee commitment may

greatly contribute to improving the work ability index and to lower fluctuation as early as in the medium term<sup>11</sup>.)

*H4: Based on the fluctuation figures of the large enterprise investigated, I assumed that the group of employees exposed to both physical and mental workloads in the course of daily work represents a risk group for the company.* (Practical relevance in HR work: if this is substantiated by research results, it is important to launch a number of process development exercises in the given fields, a possible outcome of which may be to help employees develop their work ability index by technological tools and ergonomic innovation in the future.)

*H5: I assumed that there will be a significant correlation between the value of the Work Ability Index and other indicators to be assessed by the questionnaire (age, optimism concerning the future, subjective opinion on the current state of work ability, highest professional qualification, etc.).* (Practical relevance in HR work: this research result could be utilised in practical applications with immense results, as it will allow specific target groups and fields for future actions for programmes related to maintaining work ability in HR work done at the given corporation, for both prevention and development purposes.

*H6: I assumed that the WAI methodology can be applied reliably and objectively in a large state enterprise environment.* (Practical relevance in HR work: it may be reasonable to roll out the use of this HRM tool used in the competitive sector to public service as well in the future).

## **Structure of the paper**

In addition to the introduction, this paper consists of six chapters of elaboration, which have a causal relationship to each other, with particular regard to the employment of the ageing people, work ability and human resources development, and their techniques.

The section of this paper describing the terms and theoretical background used presents the terms and principles associated with public service and competence management. This is of fundamental importance, as the paper was prepared in the framework of these definitions and notions. It is particularly important to learn about the concepts and theories associated with age management, as the primary research also focuses on this area. Social responsibility and corporate culture are absolutely necessary for the holistic investigation of age management.

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<sup>11</sup>In my thesis, fluctuation is interpreted as a labour force turnover rate widely used in HR work. Although an investigation of the trend of labour migration with an eye to sociology may yield useful data on the motivation of work, this paper does not have the purpose of giving a broader analysis, fluctuation is taken into account and interpreted for practical purposes only in connection with the context of investigating the work ability index.

In addition to figures on the economically active population, the chapter entitled the labour market and status of employment of workers in the public and private sectors presents the figures on current employment and unemployment. Naturally, the European Union's labour market situation will also be discussed. I consider the analysis of the number and composition of employees working in public service and in the competitive sector and the presentation of trends to be an important section.

The chapter on the special policy on competence and age management presents the social policy approach concerning the topic. The nature of employment policy and the concept of lifelong learning (LLL) were reviewed. The analysis of the Magyary Programme and the Public Service Development Strategy 2014-2020 helps to point out the trends of transformation in public service that have been given emphasis earlier, and a possible path for developing the employment strategy for the elderly will be outlined. In this connection, I considered it important to review the development programmes supporting the public administration strategy, including the State Reform Operational Programme (SROP) and the Civil Service Development Operational Programme (CSDOP).

In my opinion, the Magyary Programme as an overall organisational development concept, formulated and implemented primarily the structural changes. Elements of the intervention areas mostly served and serve the purpose of organisational centralisation (see the hierarchy already referred to, legal environment, procedures). In the fourth field of intervention, I experienced three directions in respect of human resources development for those working in public administration.

One of them is a *generalist approach*, aimed at the employment of professional public administration workers in several fields of administration (substitutability), in parallel with the development of commitment and loyalty. The other is to secure the development of a *career model based on law*. The third focuses on the *implementation of human resources development based on the same principles*, regardless of the position in the organisational structure.

The HR categories appearing in the Magyary Programme directly ensure a service-based public administration (performance assessment, incentives, vocational ethics, etc.), which I believe to be the right direction. On the other hand, when it comes to the main topic of this paper, no long-term expectations are put forward that take into account the changes in staff composition in respect of age group, which is also determined socially, and the related HR strategies including the application of age management. In my opinion, the analysis of labour market processes and relevant HR practices allows for substantiating the statement that it is reasonable to include the application of age management in the programme.

Similarly to the Magyary Programme, the Public Administration and Public Service Development Strategy 2014-2020 fails to focus on the changes that have been present in both the demand and supply side of the Hungarian labour market (ageing, work ability, ergonomics, health at work, etc.) already at the time of drafting the strategy. The primary HR tasks of the strategy include some tasks aimed at contributing to the application of age management in the framework of the career model, such as tailor-made career management.

However, this strategy sets its sights on the involvement of the young, a change in generations, and puts emphasis on resolving the problems that arise due to the outflow (rather than the retention) of the more elderly age groups (such as training new staff, transfer of knowledge and experience gained, lack of specific technical proficiency). Notwithstanding this, the strategy advises to consider voluntary participation for age groups a few years before retirement - as a dignified way of concluding a career -, which essentially means that civil servants retire from actively carrying out public administration work, while agreeing to train and mentor young career beginners in reduced working hours. On the one hand, this may dampen the pressure for performance stemming from a tight work schedule, while on the other hand, it offers an appropriate framework for passing on the knowledge and experience gained over long years, i.e. for knowledge transfer.

The fifth chapter presents the tools of strategy-based integrated human resource management and competence management. We shall review the meaning of strategic human resource management and its correlation with performance, knowledge and quality management. We shall present the differences and similarities of the private and public sectors based on empiric experience in the fields of management to be described later.

The correlation between age management and health as a competence is a key chapter as it introduces the set of tools available for age management and the framework of occupational health and health and safety in Hungary. The chapter clarifies basic issues such as work ability and its models. I shall also present the roots of the empirical methodology applied by me through an overview of the Finnish Model of the Work Ability House. There I shall clarify the purpose, structure and assessment of the work ability index and the Hungarian an international experience of the WAI assessment will also be analysed.

The Work Ability Index Survey in state-owned large corporate jobs chapter presents the results of my primary research. This part provides answers to the research questions such as the current assessment of work ability as well as to my hypotheses. I express evaluation and draw conclusions on the basis of the results and use data analysis models to give a more illustrative overview of the work ability of the employees of the given state-owned large com-

pany. Finally, I also present the utilisation of the experience of the Work Ability Index in the HR thesis.

The closing chapter describes the summary conclusions, proposals and new scientific results and discusses conclusions on the basis of the main findings of the chapters of the thesis. The new scientific results and areas requiring further research will also be outlined.

The novelty and usefulness of my research is based on the fact that it uses a sample of more than 1,000 participants to assess the preliminary hypothesis. There has been no such survey in Hungary prior to this research that looked at such a high number of participants with a method (work ability index) that has been validated internationally on a number of occasions. Not only the reviewed large company will be able to use the results because the scientific approach may be an example for other organisations too where prevention, development of work ability and social responsibility are important strategic objectives. Generation and age management do not have mature applied processes and tools yet in the Hungarian human resource management industry. However, if we look at the economically active population and compare it to the inactive population on an overall social scale, by using demographic models and trends, we can reach a conclusion that in the forthcoming decades one of the most important tasks of the subsequent years will be to change that in the HR industry. I assume that launching interdisciplinary projects will be the most effective tool in this pioneer work because generation and age management can only be effective both at corporate and societal level if a number of sciences are applied jointly.

### **The Finnish Model of the Work Ability House**

According to the Finnish model that I used as the framework of my study, the complex approach to work ability may be illustrated best with the structure of a House (see Figure 1).

The floors of the house are closely related and have mutual impacts on each other. If there is a healthy balance, there is good work ability and it will remain in the long term. The foundation is the health of the employee. The second floor contains the acquired knowledge, skills and abilities, proficiency and practice.

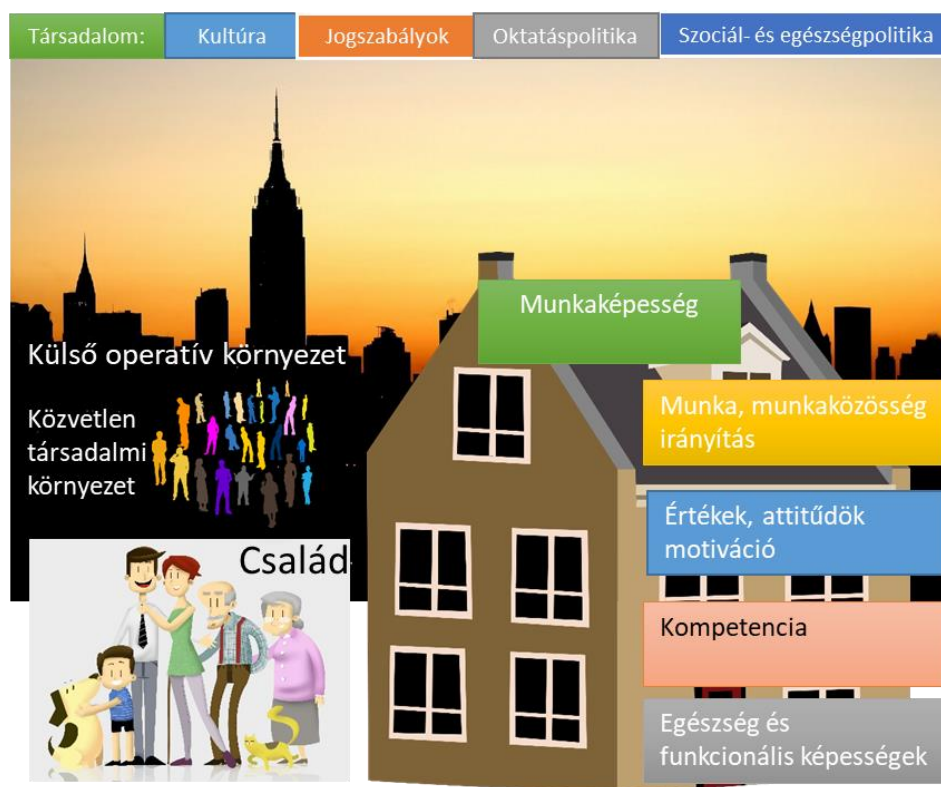
The lower levels must be strong enough to sufficiently support the higher parts of the building. The third floor is the level of internal values, which include the approach, the view of life, motivation and attitude. Each individual makes a decision on whether to remain in the world of labour or to leave it at that level. The balcony on this level opens a view to the direct environment (local community, workplace, residential community) and the information and feedback stemming from there may also have an impact on work ability.

That level has a close relationship and interaction with the fourth floor above, which is the work environment, and which also contains occupational health and safety.

The house is surrounded by factors that support the workplace (welfare at the workplace and occupational health service) and the direct social environment (family, close relatives). The larger surrounding environment is the society with all its special policy factors and services (e.g., health, HR, social policy).<sup>12</sup>

The work ability house model shows that the measures taken at the workplace in order to promote work ability must cover all four levels. Employees have higher responsibility for their health and competence and the employer takes more responsibility for the organisation and distribution of work. Consequently, the proactivity-based concept is based on co-operation between the employer and the employee: together they may create a better balance of the workplace and may increase work ability.

*Figure 1: Work Ability House*



<sup>12</sup> Ilmarinen J. (2009): Promotion of active old-age at a workplace. European Agency for Safety and Health at Work. <http://osha.europa.eu> Downloaded on 20 January 2018.

<i>Társadalom</i>	<i>Society</i>
<i>Kultúra</i>	<i>Culture</i>
<i>Jogszabályok</i>	<i>Legal regulations</i>
<i>Oktatáspolitiká</i>	<i>Educational policy</i>
<i>Szociál- és egészségpolitika</i>	<i>Social and health policy</i>
<i>Külső operatív környezet</i>	<i>External operative environment</i>
<i>Közvetlen társadalmi környezet</i>	<i>Direct social environment</i>
<i>Család</i>	<i>Family</i>
<i>Munkaképesség</i>	<i>Work ability</i>
<i>Munka, munkaközösség irányítás</i>	<i>Work, work community control</i>
<i>Értékek, attitűdök, motiváció</i>	<i>Values, attitudes, motivation</i>
<i>Kompetencia</i>	<i>Competence</i>
<i>Egészség és funkcionális képességek</i>	<i>Health and functional abilities</i>

Source: edited by the author based on Ilmarinen, J. (2009)

The risk analyses must take into account the significant individual differences reflected in functional abilities, the health of the employees, changes in their work ability, disabilities, sex related issues and harmful exposures at the workplace (physical, chemical, biological, ergonomic and psycho-social pathologic factors). As work must be aligned with individual abilities, skills and health condition with a permanent and dynamic process that is based on adequate risk analysis, aligning work to the health condition and needs of older employees may not represent any additional burden. Age is only one aspect of work force heterogeneity, management must constantly be made aware of age related issues. The adequate planning of personalised jobs and tasks, the strengths, needs and abilities of aging employees with the involvement of aging employees is a key factor in maintaining the work ability, productivity and welfare of employees.<sup>13</sup>

### **Purpose, structure and evaluation of the Work Ability Index**

The Work Ability Index Survey system was developed by the Finnish Institute of Occupational Health (FIOH) at the beginning of the nineteen eighties and it has been translated into 26 languages and applied across the world.

It was first used in a survey studying aging local government workers with the purpose of measuring and certifying the effects of work ability development measures. In Hungary, the Hungarian Institute of Occupational Health (HIOH) entered into a contract for the non-exclusive right of the dissemination of the index and the co-ordination of its use. The Hungarian version of the 2013 version was developed by the National Employment Office, De-

<sup>13</sup> Ilmarinen J. (2009): Promotion of active old-age at a workplace. European Agency for Safety and Health at Work. <http://osha.europa.eu> Downloaded on 20 January 2018.

partment of Work Hygiene and Occupational Health, which launched a national survey, the results of which are presented in detail below.<sup>14</sup>

The Work Ability Index questionnaire is a tool that helps find employees who need support to continue their role in the labour market. The Work Ability Index is also a special policy issue; based on the experience of the survey, the economic, educational and health prevention directives may be defined that can promote the activity of aging employees in the labour market.<sup>15</sup>

The Work Ability Index is a tool for keeping employees in their jobs and for elaborating and certifying development proposals and methods. Consequently, its objectives include the following:

- maintain and protect work ability during the entire period of the income earning ability,
- recognise factors reducing or improving work ability in order to facilitate individual interventions,
- summarise the risk elements of inability to continue employment and early retirement,
- evaluate the intervention options.<sup>16</sup>

The Work Ability Index always analyses one person in one particular job and therefore the role of the employment factors cannot be disregarded. At the same time, it may not be applied for a prior assessment instead of an aptitude test or risk assessment.

According to its use:

- employees about to be excluded from employment may be identified individually, development may begin before disability develops ('preventive rehabilitation'),
- enhanced risk jobs can be identified at company level (targets of work hygiene intervention, control of the success of the intervention),
- sectoral risks and comparative bases can be identified and measured at national and international levels (benchmark).<sup>17</sup>

The Work Ability Index consists of seven questions. The highest score is 49, the breakdown and assessment of which is included in the table below.

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<sup>14</sup> Work Ability Index Survey. Development of occupational health and safety, development of labour control TÁMOP-2.4.8-12/1-2012-0001. <http://munkavedelem.unideb.hu> Downloaded on 14 December 2017.

<sup>15</sup> Berg, T., Elders, L., Zwart, L., Burdorf A. (2008): The effects of work-related and individual factors on the work ability index: A systematic review. <https://oem.bmj.com/> / Downloaded on 3 February 2018.

<sup>16</sup> Jakab N. (2013): The place and role of work ability in the German and Hungarian law. Publicationes Universitatis Miskolcensis Sectio Juridica et Politica, Tomus XXXI. (2013), pp. 363–382.

<sup>17</sup> Kudász F. (2016): Work Ability Index application options <http://met.ergonomiavilaga.hu/subsites/enye28/kudasz.pdf/PPT> Downloaded on 30 January 2018.



*Table 1: Questions and scores of the Work Ability Index*

Question	Maximum score	Distribution of scoring
Present work ability compared to the best ability before	10	Score: on a scale of 0-10
Work ability in relation to the present job demands	10	Value based on the answers: between 2-10 points
Number of current diseases	7	Scoring: – at least 5 diseases = 1 point – 4 diseases = 2 points – 3 diseases = 3 points – 2 diseases = 4 points – 1 diseases = 5 points – no diseases = 7 points
Estimated impact of diseases on work	6	Score: between 1-6 points
Sick leave in the past 12 months	5	Score between 1-5 points
Own estimate on work ability in two years from the response	7	Score based on the answers: –I probably will not be able = 1 point –not certain = 4 points –I’m rather certain that I will be able = 7 points
Psychological power reserve	4	Score: based on the total of the numbers from the set of questions 0-3 = 1 point 4-6 = 2 points 7-9 = 3 points 10-12 = 4 points

Source: Edited by the author based on Kudász F. (2016)

The Work Ability Index is based on questionnaire self declarations and, following its evaluation, the results indicate the current status of the employee well and project with high precision the continuation of employment.

*Table 2: Valuation of the Work Ability Index*

Score	Work ability category	Proposed measures
7-27	bad	restoration of work ability
28-36	moderate	improvement of work ability
37-43	good	strengthening of work ability
44-49	excellent	maintenance of work ability

Source: Edited by the author based on Kudász F. (2016)

According to the most frequent criticism, the Work Ability Index is based on the subjective feeling of the employee rather than focusing on the conditions of the workplace, the circumstances and terms of employment, i.e., those defined in the employment contract. It basically takes into account the employee’s feelings about the workplace without explaining them and therefore it does not support the improvement of work conditions or the concepts and tools with which intervention could take place. However, according to those who protect the index the work ability defined in this manner does not only depend on the individual but is also determined by the work conditions and requirements.<sup>18</sup>

<sup>18</sup> Jakab N. (2013): The place and role of work ability in the German and Hungarian law. Publicationes Universitatis Miskolcensis Sectio Juridica et Politica, Tomus XXXI. (2013), pp. 363-382

Their experience also shows that the Work Ability Index seeks answers in the following areas of intervention:

- health related problems,
- problems related to everyday tasks and fitness,
- problems related to abilities, qualifications and knowledge,
- problems related to the physical burden of work,
- problems in the work environment (labour safety),
- problems related to the operation of the community at the workplace,
- problems related to the intellectual burden of employment,
- reduction in the drive for work and motivation,
- problems independent of work (family, financial, etc.).

By defining the intervention areas identified on the basis of the above, the employee will have an opportunity to maintain the ability to earn an income. The employer receives assistance to improve productivity and competitiveness. The occupational health service receives supplementary data about the health of the employee.

### **Work Ability Index Survey in the jobs of state-owned large companies**

The query was run on the basis of the Work Ability Index (WAI) questionnaire referred to in the introduction and described in detail in the previous chapter. The respondents gave their answers voluntarily, with self declarations reflecting the nature of the questionnaire. 1,743 individuals filled in the questionnaire. That number represents 5.82% of the total employees of the analysed large company, and sufficiently represents the population. No WAI research has been conducted on such a scale within one company in Hungary yet. Participation in the survey shows the commitment of the given large company to the protection of health of employees and improvement of their loyalty and commitment.

With the exception of the respondents who did not answer questions about the geographic location (12.39%), according to geographic distribution, most respondents were employees working in Budapest, Baranya and Pest Counties, and we found significantly lower willingness to provide response in Borsod-Abaúj-Zemplén and Vas Counties (see Table 18). It was also observed in other internal surveys conducted at the given large company that the employees are significantly more active in the capital city.

*Table 3: Territorial breakdown of the sample*

County	Total employees	Ratio	Questionnaire	Ratio
Budapest capital city	1,315	4.39%	538	30.87%
Bács-Kiskun County	1,363	4.55%	56	3.21%
Baranya County	879	2.94%	148	8.49%
Békés County	1,963	6.56%	26	1.49%
Borsod-Abaúj-Zemplén County	6,878	22.97%	71	4.07%
Csongrád County	1,107	3.70%	41	2.35%
Fejér County	1,127	3.76%	54	3.10%
Győr-Moson-Sopron County	1,407	4.70%	71	4.07%
Hajdú-Bihar County	1,525	5.09%	48	2.75%
Heves County	846	2.83%	31	1.78%
Jász-Nagykun-Szolnok County	951	3.18%	37	2.12%
Komárom-Esztergom County	760	2.54%	41	2.35%
Nógrád County	484	1.62%	23	1.32%
Pest County	3,838	12.82%	154	8.84%
Somogy County	1,021	3.41%	53	3.04%
Szabolcs-Szatmár-Bereg County	1,355	4.52%	54	3.10%
Tolna County	632	2.11%	22	1.26%
Vas County	677	2.26%	16	0.92%
Veszprém County	1,081	3.61%	23	1.32%
Zala County	736	2.46%	20	1.15%
No data	-	-	216	12.39%
Total	29,945	100.00%	1,743	100.00%

Source: own editing

The questionnaire-based research was conducted through the EVASYS computer system, online and on paper, between 2 July and 14 August 2018. The exact format of the printed questionnaire is included in the attachment. The hard copy of the questionnaire extracted from the EVASYS system was suitable for automated processing, i.e., the returned questionnaires were scanned and then imported into the system. Thus the database contained 1,743 elements proceeded by me resulting from data collected online and offline.

I began processing the data by cleaning and categorising them. I created groups from the raw answers (such as age, geographic, place of work) in order to assess the results comprehensively. Then I added models prepared with the SPSS statistical software to the analysis containing the descriptive statistical data provided by the EVASYS system.

The knowledge obtained during my doctoral training helped me a great deal in the interpretation of the results, in addition to which I relied mainly on online sources in terms of the methodology.<sup>19</sup> I used various data reduction methods (factor analysis and main component analysis) for data compression and data structure identification as well as a model with which data were classified into groups (cluster analysis). All these methods and models came from the tool set of analytical statistics. The conditions of their applicability were reviewed in accordance with the methodology requirements with variance analysis in the case of clus-

<sup>19</sup> [www.spssabc.hu](http://www.spssabc.hu) és Pang-Ning Tan, Michael Steinbach, Vipin Kumar: Introduction into data mining, available online ([www.tankonyvtar.hu/hu/tartalom/tamop425/0046\\_adatbanyaszat](http://www.tankonyvtar.hu/hu/tartalom/tamop425/0046_adatbanyaszat))

ter analysis and with the Bartlett test and with the review of the KMO – Kaiser-Meyer-Olkin index in the case of the main component analysis. In addition, for simpler implementation and graphic display I expressed the individual straight-line regression models in graphs with the help of the Microsoft Excel program.

### **Conclusions on the basis of the main findings of the chapters of the thesis**

The demographic changes may cause the most significant negative labour market impulse in the 2020s, when the number of people of employment age may drop by 11 per cent compared to the averages of the previous decades. This is a significant number in relation to which complex age management programmes need to be launched at the level of the national economy and companies at the end of the current decade.

The labour market indicators of the age groups above 45 change so drastically in Hungary in relation to the employment rate that, as an example, the index drops by more than 50 per cent between the 55-59 age group (71.5%) and the 60-64 age group (35.2%). A programme launched in that age group could result in huge improvement in the available work force which would be needed very much in order to maintain economic development.

In future, global trends will influence the labour market (robotisation, artificial intelligence) in which gradual increase of work performance will have a crucial role. This can only be achieved by boosting knowledge intensity, which requires continuous knowledge transfer between generations. Among these challenges, human resource management must develop new tools in order to be able to generate sufficient added value both in the public and private sectors as one of the most important functional and strategic organisations within a company.

Predictive analysis is becoming an increasingly important part of the HR processes of companies because it provides complex business information and insights that help more effective management of human resources and prepare the company for future challenges at a good time, before they would present impossible tasks to the management of the organisation. Here is a very short obvious example: if at the moment a company planned to pursue competitive manufacturing or logistic activities globally/in Hungary amidst increasing labour costs, the solution should not be a gradual increase in consumer prices. Market regulates and would make the organisation included in my example uncompetitive.

The only solution would be that the management reviews the process optimisation followed by specifically designed automation and robotisation that could be developed or purchased from the market within the subsequent 3-5 years. In that change management the most important factor is how the organisation can retrain its staff from manual jobs decreasing in volume to the utilisation of the new set of competencies. How can we predict the intel-

lectual and physical work load employees should be able to cope with in the new work environment. Perhaps this example also shows that in such a rapidly changing technology and economic structure it will be impossible to develop an effective HR strategy without sufficiently embedded predictive HR methods. The WAI methodology helps develop such a predictive tool in the future through a deeper statistical analysis of the results (cluster analysis, main component analysis, etc.) and effectively develop work ability, concentrating on the focus groups where reduction of work ability is mostly at risk.

Age management strategies (part time, transformed/customised jobs, etc.) may be developed where aging employee groups can deal with knowledge transfer and other key roles and where this social group can also become more active in the labour market.

Each company, organisation and institution should concentrate more on its employer brand development because acquiring the best employees is proving to be an increasingly difficult challenge. Jobseekers have a lot more options and can find information about their future employers more easily (managers, the values of the company, their actions in corporate social responsibility, etc.). That is why companies must take all reasonable efforts to present themselves most positively to their future colleagues but it can only be achieved if their message, communicated inside and outside their company, is credible. That can work if employees receive positive employee experiences from their employer before joining the company, during employment and after they have left the company. Here is a simple example: innovation and bureaucracy-free operation can only be advertised on the market as the employer brand message of a given company if they are actually true. If an employee finds during the first month that their ideas are not listened to and that they have to fill in a number of authorisation forms even in relation to the simplest job related issues, it will definitely lead to an irresolvable credibility deficit and the exit of the employee.

An employer brand must be built where each age group can find messages attractive to them. However, it requires effective generation and age management at companies, which cannot be achieved without understanding the Work Ability Index of the present employees and all other correlations that affect it.

### **Prove/rejection of hypotheses**

*In my first hypothesis* I assumed that the average Work Ability Index of the respondent employees involved in the large sample survey would be 60% of the maximum score in the good and excellent categories at the surveyed large company and therefore 40% would belong to the group to be developed.

In my research, the average Work Ability Index was 4125 points from the maximum 49 points. On the basis of the aggregated values, 82.9% of the employees included in the sample fell in the good and excellent categories, i.e., 17.1% belonged to the group to be developed. This research data contradict to my preliminary hypothesis because I assumed that only 60% of the analysed employees would belong to the good and excellent categories. **The results completely refuted this hypothesis.**

*In my H2 hypothesis* I assumed that people with higher qualifications would achieve significantly the best results in terms of the WAI index. On the basis of my research results, the highest Work Ability Index (42.53 points) was measured among those who completed a course. it was 42.51 points among those who had university or college qualifications and, in a special way, was also relatively high, 42.09 points, among those who did not have any professional qualifications (Figure 51). I measured the lowest index among those who had professional qualifications within the large company (40.30 points).

**My research did not support my hypothesis even in part,** and therefore rather than adding higher dual vocational training on the agenda, in my opinion the number of colleagues taking part in training courses should be increased on the basis of the data of the objective survey.

*In my third hypothesis* I assumed that the groups of respondents with average and high qualifications who are generally optimistic about the future, would have close to average (secondary qualifications) and higher than average (higher qualifications) Work Ability Indices. According to my hypothesis, the Work Ability Index of individuals who obtained vocational qualifications only within the particular large company and expressing negative projections for the future would be much lower than the company average.

On the basis of the research results, we may concluded that the groups of respondents with average and high qualifications who are generally optimistic about the future, had close to average (secondary qualifications) and higher than average (higher qualifications) Work Ability Indices. At the same time, the Work Ability Index was much lower than the company average in the cluster where the highest qualifications was the vocational qualifications obtained in the state-owned large company and where the individuals expressed negative projections about the future. **The data fully supported my hypothesis.**

*In my fourth hypothesis* I assumed, based on the fluctuation data of the analysed large company, that employees who are exposed to physical and intellectual work in their daily work relating to their jobs would represent a risk group. If the research results also support the same hypothesis, multiple process developments should be launched in the given specific

fields, one of the potential outcomes of which could be assistance to employees in the future with technical tools and ergonomic innovation in order to develop the Work Ability Index.

On the basis of my research, the Work Ability Index is significantly different: in the group exposed mainly to physical and also intellectual work load, the index was 39.65 (as a reminder, the average of the entire sample was 41.25).

**It was confirmed that a risk group may be identified in terms of the negative health impacts of work performed at the particular organisation: this group consists of employees who are exposed to physical and intellectual work in their daily activities.**

**The cluster analysis fully supported my preliminary hypothesis.**

*In the H5 hypothesis* I assumed significant correlation between the Work Ability Index and other indicators reviewed in the questionnaire (age, optimism about the future, subjective opinion about the current status of work ability, highest vocational qualifications, etc.).

On the basis of my research data, there is significant correlation between the Work Ability Index and other indicators reviewed in the questionnaire (age, optimism about the future, etc.), which I presented with the tools of statistical methodology. **Thus the hypothesis was fully supported by the received results.** These research results may be used extensively in practice because the HR staff of the particular company can designate specific target groups and fields of actions for programmes dedicated to the continuation of work ability in the future, both for prevention and development purposes.

Finally, in the *H6 hypothesis* I assumed that the WAI methodology could be applied reliably and objectively in a state-owned large company, therefore its use can be extended to the entire public sector in the future.

The reliability and objectivity of the WAI methodology was proved on a sample consisting of more than 1,000 members, with primary research, in relation to one state-owned large company. It was able to provide scientifically proven data in relation to human resource management problems (risk group identification, correlation analysis, etc.) and therefore the HRM tools used in the private sector could be widely extended in the public sector, which means that **my hypothesis was confirmed.**

### **New scientific results and areas requiring further research**

The new scientific result stems from the fact that the applicability of the WAI methodology in Hungarian large company could be proved with a research project involving so many respondents. Based on the validated information that the average Work Ability Index is 41.25 points out of the maximum 49 points at the company, the employer can define future pro-

grammes with which the improvement of the index may become visible in a new measurement.

82.9% of the employees belong to the good and excellent categories, i.e., 17.1% require development. This research data is new, scientifically validated information which contradicted to my hypothesis made prior to the survey because I assumed that only 60% of the surveyed employees would belong to the good and excellent categories.

The research scientifically proved that the Work Ability Index of employees who obtained vocational qualifications within the particular large company and had negative projections for the future was much lower than the company average. I was able to analyse this with deeper statistical correlation assessment of the research results and with a cluster analysis. ON this basis, the human resource management of the large company can develop and introduce proactive, preventive and development programmes with which the Work Ability Index of this employee group could be improved significantly. There is significant correlation between the Work Ability Index and other indicators reviewed in the questionnaire (age, optimism about the future, subjective opinion about the current status of work ability, highest vocational qualifications, etc.); it is a research result that gives an important basis for preparing a human resource management strategy planned for the future. IN its practical implementation we would be able to designate specific target groups and fields of action for the future HR programmes for preventive and development purposes.

The differences between the individual organisational units and jobs in WAI data and their roots in the reviewed large company are fields requiring further research. It would be important to see the correlation between the results resulting from other surveys at the particular employer which measured the professional competence level or degree of commitment of the employees in comparison with the Work Ability Index Survey. Once the age and generation management programmes are launched at this large company, it would be advisable to prepare WAI related backtests for targeted specific groups. These data could confirm whether or not the employer's investment into the development of the work ability of employees generated any return or not.

In my opinion, the use of the WAI index should be expanded in Hungary also at macro level. In that framework, the current situation could be assessed with a wider sample-based survey broken down by industry and changes could be designed and implemented in the regulatory environment not later than in the 2020s, for which validated scientific results are available.

The public service development programmes introduced in 2010 (Magyary Programme, public administration strategy) and the research and development programmes aimed at that



area (ÁROP, KÖFOP) do not focus on the issues related to the aging employees. This methodology assessing the work ability of aging employees should become part of the public administration development strategy which is currently being developed to be introduced in 2020 in order to be able to sustain and improve the efficiency of the labour market in the subsequent decades despite the unfavourable demographic trends.

### **Publications and scientific presentations of the author (based on MTMT)**

1. Varjasi, Gábor Going Global – The Benefits of Coaching Across Geographic Boundaries – WorkJoy Paper: <https://www.workjoycoaching.com/going-global-benefits-coaching-across-geographic-boundaries/> (2018)
2. Varjasi, Gábor Why the Global Talent Shortage Might be Here to Stay Paper: <https://huntsanlon.com/global-talent-shortage-might-stay/> (2018)
3. Varjasi, Gábor About corporate policy with a positive prefix (Presentation) (2018) Effective tools of maintaining and developing work force, National Conference of HR Managers, 27 September 2018, Danubius Hotel Margitsziget.
4. Varjasi, Gábor HR good practices in large companies. Presentation (2018) JOB-BASED HUMAN RESOURCE MANAGEMENT AND HUMAN CAPITAL REFORM International Conference, Section III, NEK, Budapest 27-28 June 2018
5. Varjasi, Gábor; Nemeskéri, Zsolt; Tibold, Antal Conceptual Framework of a Development Program: A method for combined measurement of physical and mental competencies in an ageing worker population pp. 199-203., 5 p. In: Tibold, Antal (ed.) Work and health: Studies from the borderline of work science and occupational health, Budapest, Hungary: Edge 2000 Kiadó (2018)
6. Szabó, Szilvia; Varjasi, Gábor Integrated change management in practice based on the Lewin model KNOWLEDGE MANAGEMENT 19 : 1 pp. 9-14. , 6 p. (2018)
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8. Varjasi, Gábor HR strategy with a business focus in Hungary and in Europe. Presentation (2016) XXVI. National HR Conference, Kecskemét, 6 June 2016
9. Varjasi, Gábor The possibilities of using private sector HR tools in public sector organizations human resources management. Presentation (2016) Spring Wind Conference, 15-17 April 2016, Óbuda University, 1084 Budapest, Tavaszmező u. 15-17, Public administration science section, 16 April 2016
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12. Varjasi, Gábor Application options of the HR tool set of the private sector in the HR policy of public administration organisations. HR ÉS MUNKAJOG (HR and Labour Law) 7. (2016)
13. Varjasi, Gábor Ethical and corporate values - Why are they so important? How do they affect the organisational structure and how can ethical behavioural culture be developed at workplaces? HR ÉS MUNKAJOG (HR and Labour Law) 7. (2016)
14. Varjasi, Gábor Leading with Diversity – case study presentation (2015) Emerging Markets HR Summit, 11-13 Nov 2015, London
15. Varjasi, Gábor What is to role of HR function in change management. Presentation (2015) NKE research forum, 14 May 2015
16. Varjasi, Gábor Bridging the Gaps between Generations (2015) Discovery HR Meeting, organized by Knowledge Central in Austria Trend Hotel Park Royal Palace, Vienna on 12th-13th of March 2015, Published in Austria
17. Varjasi, Gábor Competence-based management development practice and conditions of applicability in the public sector. Presentation (2015) 5th Management Science Conference, 'Organisations and management 104 years after Taylor', 29 May 2015. Szeged, Public management section,

18. Varjasi, Gábor Stakeholder approach pp. 304-307. In: Szabó, Szilvia; Szakács, Gábor (ed.) Public service HR management, Budapest, Hungary: NKE Szolgáltató Kft., (2015)
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28. Varjasi, Gábor Attract, Recruit and Retain Top Technical Talent at MOL Group, Paper: <http://www.marcusevans-conferencespaneuropean.com/marcusevans-conferences-event-details.asp?EventID=20041&SectorID=3#.W-Xe7dVKgdU> (2013) HR Strategies for the Energy Industry – marcus evans european events /HR Strategies for the Energy Industry, 10-11 June 2013. Radisson Blu Hotel, Amsterdam, the Netherlands.
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31. Varjasi, Gábor MOL Group Case study pp. 61-62., 2 p. In: Dave, Ulrich; Jon, Younger; Wayne, Brockbank; Mike, Ulrich (ed.) HR from the Outside In: Six Competencies for the Future of Human Resources New York, United States of America: McGraw Hill Inc, (2012)
32. Varjasi, Gábor Talent management at the MOL Group (Presentation) (2011) National Association of HR Experts, II. National Human Research Management Conference, 27 October 2011, Zsigmond Király College.

## **Professional CV of the Author**

Gábor Varjasi has been working in the HR field for 20 years, of which his management experiences span 18 years. He has already managed HR Teams in Europe virtually and most recently worked as the Human Resources General Director of the Hungarian Post Office, the largest company of Hungary where he managed the work of more than 450 employees in personal areas who supported 30,000 persons regarding HR. He started his PhD studies in 2013 in the Doctoral School of Military Sciences then, from the 2nd semester, he successfully joined the commencing Doctoral Programme of Economics. Since 2008 he has been continuously giving professional scientific presentations both in Hungary and abroad. Most recently at Debrecen University and in London in April. He has been continuously publishing papers in the subjects of HR Competence Development, talent management and regarding the subject of opportunities for the introduction of the HR toolkit in the competitive sector. He has also published already in both a textbook and an English language scientific publication. A number of joint publications with his supervisor were also published.

Gábor Varjasi obtained his diplomas in Pécs (2000 – human resources organiser and 2003 – economist). By working as an HR specialist at GE, he started gaining practical experiences already during his years at university from 1999 onwards. He obtained his first managerial appointment in 2001 in Sopron after having completed the six month management training programme at Tesco, a course introduced following the English model. In addition to managing HR, he also served as the health and safety managers of Tesco stores in Sopron and Zalaegerszeg. In 2004 he was appointed as the HR Director of Jabil Global Services and so could participate in the green field investment of the American company in Szombathely. Upon his hiring, the number of staff was only fifty but 2 years later he could already act as the HR manager of an electronics service company boasting revenues of several tens of millions of dollars with a staff of six hundred people. Effective from 2006 he has been filling the HR Director position of the Zala Industry Park of Flextronics (with a total staff of 200,000 worldwide) for nearly three years during which time he developed the HR Business Partner structure, introduced efficiency enhancing measures saving some HUF 200 million and was also selected to be one of the HR managers worldwide (the only person from Europe) to participate in the two-week master course of Dave Ulrich HRLP. The professor has been mentoring him ever since and they keep maintaining an active relationship regarding HR professional matters. He has been managing MOL's competence development and strategic HR function for 4.5 years. This organisation was responsible for developing management performance and career management processes in all countries of MOL Group from Italy to Pa-

kistan, including, among others, the Growww young graduate scheme. In 2010 his MOL HR Team was presented with the HR Oscar Award for their holistically developed secondary school concept focusing on promoting natural sciences. In 2011 his Team was presented with another prestigious award, this time the European Excellence Award. From 2012 to 2014 he worked as the HR Director of MOL's Global Research and Production, boasting a staff of 6500 in 14 countries.

His greatest achievement was the laying down, within 6 months, of the conditions necessary for the HR operation of MOL UK, a subsidiary in Scotland, that has been operating successfully ever since. Ever since its inception, Gábor has been the elected vice-president of the Together for the Engineers of the Future Association, with the then President of the association being Minister László Palkovics. In 2014 he joined Monsanto where he introduced the newly established HR Business Partner function on a European Level in 20 countries. Effective from 2017 he has worked for nearly 2 years as the HR General Director of the Hungarian Post Office where he successfully completed the HR Transformation project. He currently works as the HR Business Partner Director of the Global Business Solutions division of British Petrol.