

# RESEARCH PAPERS FACULTY OF MATERIALS SCIENCE AND TECHNOLOGY IN TRNAVA SLOVAK UNIVERSITY OF TECHNOLOGY

IN BRATISLAVA

2019, Volume 27, Special Number DOI 10.2478/rput-2019-0035

# THE ASPECTS OF AGE MANAGEMENT TOWARDS SUSTAINABLE AND RESPONSIBLE BUSINESS

Emese TOKARČÍKOVÁ<sup>1</sup>

<sup>1</sup>University of Žilina
Faculty of Management Science and Informatics
Department of Macro and Microeconomics
Univerzitná 8215/1, 010 26 Žilina, Slovak Republic
e-mail: Emese.Tokarcikova@fri.uniza.sk

Received 20 September 2019, accepted 23 October 2019, published 6 December 2019

#### **Abstract**

The aim of this article is to present and promote current research outcomes in the field of age management and its impact on sustainability through a review of the appropriate literature sources and pieces of empirical experience. The identification of relations between the work ability index, ageing population and the needs of the labour market can significantly improve the decision-supporting models that the managers can use to achieve higher competitiveness and sustainability for their enterprises.

#### **Key words**

Age management, sustainability, work ability index

#### **INTRODUCTION**

The concept of sustainable development represents an oxymoron for many managers. The others think that this is the only way how to keep current and future generations alive by meeting their basic needs of life, without reducing the diversity of the nature, and while preserving the natural functions of the ecosystems. Sustainability efforts maintain a fundamental relationship between society and nature while many topics and aspects are related to them. This term is complex, ambiguous and incomprehensible. The easiest form how to describe this kind of economic, social and environmental progress is to define it as a way of bringing social, economic and ecological changes that allow people to reach their human potential. Certainly, recent studies and data strongly confirm that artificial intelligence's massive capabilities will boost human potential and fundamentally change the nature of work and enterprise's activities in ways not seen since the Industrial Revolution and the invention of electricity, but even Steven Hawking was torn on their value and said that "AI could be the biggest event in the history of our civilization, or the worst. We do not know whether we will be helped by AI or, conceivably,

destroyed by it" (BBC, 2014). Nowadays, from a business perspective, business processes can take advantage of intelligent automation, machine learning, etc., so the managers can improve operational efficiency, boost productivity, reduce costs, increase investments (Malichova at al. 2016), provide better customer services in a timelier manner, etc. Despite these revolutionary innovations, a business cannot exist without human capital. The human element of to the workforce is still not under a threat, but due to the demographic and social challenges in society and labor market, the shortage of qualified human capital could cause a problem for the achievement of more sustainable economic and social development. The topic of age management, as an instrument for strategic prioritization of maintaining and developing human capital, helps move towards resilience and sustainability at all managerial levels of an enterprises.

# MATERIALS AND METHODOLOGY

The methodology background of this article focuses on the theoretical issues via a structural approach. It starts with an introduction, basic facts about age management, basic terminology, definitions and starting points. Next phase deals with bibliographic coupling of selected topics and keywords and content analysis of the earliest relevant publications. Searching for them was made via Scopus and Web of Science (WoS) tools during the period from 4<sup>th</sup> of January to 24<sup>th</sup> of May 2019. The discussion includes the findings and future perspectives. The article is written based on secondary data sources.

#### AGE MANAGEMENT - MANAGING THE AGEING WORKFORCE

Management at all levels create the basic prerequisites for the planning, organizing, staffing, leading and controlling activities of enterprises. Due to increasing life expectancy at retirement age, subsequent problems with the guarantee of the sustainability of the pension systems and problems in the labour market, the managerial decision making and coordination process cannot lack business management tools focused on ageing human capital. Age Management (AM) is a tool that managers can use to manage day-to-day responsibilities of the workers with regard to their changing needs, taking the age into account. According to Ilmarinen, age management is the proper personal management that supports the enterprise in achieving its visions thought strategic objectives and by enforcing personnel strategy with the added value brought by the strengths and challenges of the employees' varying age. (Ilmarinen, 2006) A guide to good practice in AM (2006), prepared by the European foundation for the Improvement of Living and Working Conditions, emphasizes that to achieve more sustainable economic and social development, the EU set itself the target of increasing the employment rate of older people. This guide encompasses eight dimensions of AM, such as the *job requirement*, learning (training and lifelong learning), career development, flexible working time practises, health protection (promotion, workplace design), redeployment, employment exit (transition to retirement) and comprehensive approaches. The topic of age management was widely extended by a group of experts from the Finnish Institute of Occupational Health (FIOH). Their multidisciplinary team of scientists compiled a new epistemological method called the Work Ability Index (WAI). Work ability is a dynamic relationship between a worker's individual resources and demands, as well as the resources of work. These factors from the FIOH have been illustrated by the Work Ability House concept (Fig. 1), which integrates aspects related to well-being, health and macro-social environment. Despite the fact that age management is primarily focused on older employees, it also widely promotes and affects younger employees, which is undeniably an added value in relation to the demographic changes. (Witkowski, Bartosz, 2017)

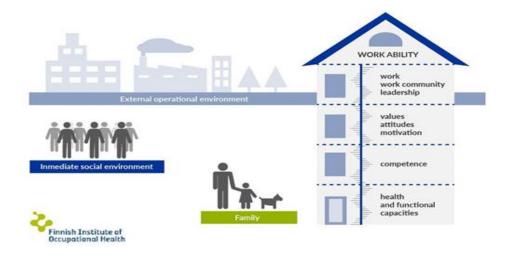


Figure 1 Work ability house (source: FIOH on -line, 2019)

Managers in Slovakia started to deal with the topic of AM via the support of Finnish and Czech experts. A Czech team of experts (Cimbalková at al., 2012), with cooperation from their Finnish colleagues, prepared a guidebook for AM, which provides basic information and gives a practical managerial tool for HR managers and labour office counsellors. Certain guides also contain various shortly characterized best practice examples.

# REACHED RESULTS

To identify the researched connections between the management of ageing workforce and sustainability, a literature review combined with bibliographic coupling was performed. The initial basic results are shown in Table 1. Even though the sustainability is a more investigated researched topic, it is improved and influenced also by the identified key factors and results from AM. Today, it is not enough for enterprises to succeed. There is a continuous effort of sustaining the enterprise's success in the prospective future.

Table 1 Basic analysis of relevance of the selected topics searched in Scopus and WoS						
G 1 14 ·	Scopus (article title, abstract, keywords)					
Searched topic						
in subject areas: Management,	results from total	source with	countries with highest number of	several entries from the first relevant articles		
Economics Social Sciences	number of articles	highest number of related	related articles	reievant articles		
Social Sciences	(24.5.2019)	articles				
sustainability	from total 187 130 in interval [72 643- 76 650]	Sustainability Switzerland (1688 documents in 2018)	United States United Kingdom Australia	Hartwick, J.M. (1974) Price sustainability of location assignment Chapman, M.P. (1982) The mature region building a practical model for the transition to the sustainable society		
age management	from total 339 in interval [102-110]	International Journal of Human Resource Management	United States United Kingdom Czech Republic	Naegele, G. (2000) Active strategies for an ageing workforce Furunes, T., Mykletun, R.J (2005) Age management in Norwegian hospitality business		

Searched topic in subject areas:	Web of Sciences (article title, abstract, keywords)				
Management, Economics Social Sciences	results from total number of articles (24.5.2019)	source with highest number of related articles	countries with highest number of related articles	several entries from the first relevant articles	
sustainability	from total 148 112 in interval [72 643- 28 475]	Ecological Economics	United States United Kingdom Australia	Hartwick, J.M. (1974) Price sustainability of location assignment Baseman, KC (1981) Sustainability and the entry process	
age management	from total 274 in interval [85]	International Journal of Human Resource Management	Czech republic Poland United Kingdom	Zientara, P. (2009) Employment of older workers in Polish SME: employer attitudes and perceptions, employee motivations and expectations	

Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report, 1987). In one of the first relevant articles, Hartwick (1974) examined how patterns of sites and interplant interdependencies are determining price sustainability (for example, the effect of shipping goods from a suburban location instead of via the city centre, etc.). The other paper by Chapman (1982) deepens our understanding of how the declining petrol-energy and the ageing population and infrastructure affect regions and require greater regional sustainability. He emphasizes that the efforts in other, more developed regions may also shed light on topics such as public or private sector roles, transferability, interregional effects and other phenomena deserving further investigation. Responsible business decisions should have not only economic or technical interests, but in the long run, they should include the gains from human resources used for the whole society. Within the human resources management, AM is one of the particular managerial tools. In relation to this, Naegele (2000) summarized the most important results related to the active strategies for the ageing workforce from a conference that took place in Turku/Finland in 1999. From all EU-member states, about 140 experts participated. Paper from Zientara (2009) based on the semi-structured interviews with entrepreneurs and employees shows that they recognize the value of older employees, because with flexible working arrangements, these employees are motivated to learn new things and to improve their own skills. The newest research papers contain results of various quantitative and qualitative surveys and discussions focusing on sustainable careers, improvements of the quality of ageing at work, sustainable lifestyle programme, sustainable social changes, perceived work ability, measurement and evaluation of work ability index (WAI), testing work ability house models etc. The WAI, as a managerial tool, involves a questionnaire that serves for the conduction of selfassessment. The focus is on the employees and their work ability assessed by themselves. The WAI consists of seven items regarding both physical and psychological aspects of work ability. Scores range from 7 (the lowest) to 49 (the highest). The points of the WAI form the basis for the determination of the level of work ability according to the following scales: 7–27 ("poor" work ability), 28-36 ("moderate" work ability), 37-43 ("good" work ability) and 44-49 ("excellent" work ability). (Ilmarinen et al., 2006)

#### **DISCUSSION**

The main factors influencing the perception of the quality of work in the ageing process are health, work organisation and workload, employment and economic stability, work-life balance, satisfaction, professional identity, relations at work, and the competences.

The findings further contribute to the need for age management practices for sustainable-responsible production, and they emphasise the need for research within the following areas:

- Sustainable and supportive inter-generational solidarity. Since an individual's biological age cannot be changed, it is important to recognise which variables can be targeted more easily by the age management initiatives. The Forsten-Astikainen at al.'s (2018) study on a sample of 4 439 employees from 93 SMEs in Finland revealed that the motivational factors (performance, trust, and well-being) vary significantly between generations too.
- Sustainability of pension systems in EU. According to Egdell at al. (2018), in spite of the EU's legislative drivers, there is a lack of systematic approaches that could be used to prepare for the demographic and labour market changes and to benefit from them. The full attention of enterprises on younger workers and disinterest or not an adequate interest in older workers, even though they also have high potential, need fundamental changes.
- Sustainable care and work-balance system. Researchers Päivärinne at al. (2019) found out a significant relationship between leisure-time physical activity and work ability at different occupational physical activity levels (adjusted for age, alcohol consumption, and working-class status, BMI, and the years of employment) among young adult men. Their results underline that this relationship was significantly greater in physically demanding jobs than in more passive jobs. Suitable corporate culture as a unique set of opinions, value systems and standards of behaviour, strategic instruments and motivational factors are discussed by a group of researchers Lorincova et al, (2016, 2016a and 2018) and shown, that motivate employees in terms of occupational classification and the age influence the employee's work balance system.

To achieve these goals, managers should focus on the development of age awareness during the planning, implementation, improvement of working conditions, cooperation of all stakeholders, and communication. It is vital to continuously monitor the current trends and the future needs, and to evaluate and assess these via new metrics for age management, e.g. the evaluation of labour market programmes, employee's competence, performance, trainability, sustainability of pension systems, etc.

- Improvement of working conditions. University of Žilina as the first university in Slovakia started the programme called Towards Successful Seniority TM, focused on successful professional seniority. Selected university teachers have already completed the first part of this unique training and developed programme provided by experts from the Finnish Institute of Occupational Health to promote career management, professional qualifications and mental well-being. As Mindeková (2018) confirmed, the programme is a tool that supports the application of AM and represents the current direction within the human resources management. It includes the measures that respond to the ageing of the workforce and create the conditions for the inclusion of all generations in the workplace. It sets a systemic approach that includes corporate culture, employee care and individual personnel activities (UNIZA, on-line)
- New metrics for age management with the IT support. Thinking about new metrics always deepening the understanding, analysis and achieving goals in selected research areas. In case of AM increasing the availability of qualitative and quantitative data is necessary. Moreover, familiar performance indicators or human capital indicators should be adjusted, specify or expand. As Kucharčíková, Mičiak and Hitka (2018) shows via measurement and

assessment of the effectiveness of the utilization of human capital and effectiveness of investment in its development, the performance and competitiveness of the enterprise increasing within the context of sustainability. Relevant data should be then collected and evaluated through sophisticated Human Resources Management software to get in-depth reports. HR tech is suitable for any type of business, increasing effectivity of the manager's decision making processes in case of attracting the right employees, engaging employees, managing their performance and to prepare appropriate workplace for them. The usage analytic hierarchy process to solve employee selection in accordance with AM is shown by Vraňaková at al. (2019). Also the acceptance of the age management in terms of the sustainable development is in a close relationship with implementing voluntary reporting and the willingness to develop a favourable image of the company within a competitive market (Socoliuc, M. 2018)

# **CONCLUSION**

The management of enterprises faces fundamental sustainability problems, and therefore age management will get more and more importance. Within the current context of demographic ageing, it becomes important to understand how health and social perception may be related to the reduction of work ability over the years. The potential of older people requires the implementation of goal-oriented managerial methods, and above all, ageing employees need the trust of enterprises. The measurements of the professional career via the Work Ability House model or some of the detailed features, such as the measures of the satisfaction together with the application of new technology can undoubtedly be used for proper age management in enterprises.

# Acknowledgement

This paper has been written with the support of VEGA 1/0382/19 – The building of sustainable relationship with the enterprise's stakeholder groups via the creation of value with the application of information-communication technology.

# References

- [1] BRUNDTLAND REPORT, 1987. Report of the World Commission on Environment and Development: Our Common Future, http://www.un-documents.net/our-common-future.pdf
- [2] CHAPMAN, M.P. 1982. The Mature Region: Building a Practical Model for the Transition to the Sustainable Society, *Technological Forecasting and Social Change* 22:167-82
- [3] CIMBÁLNÍKOVÁ, L., et al. 2012. Age management pro práci s cílovou skupinou 50+: metodická příručka (Age management for target group 50+: methodological manual). AIVD ČR.
- [4] EGDELL, V. MACLEAN, G., RAESIDE, R. CHEN, T. 2018. Age management in the workplace: management and older worker account of policy and practice, *Ageing & Society* Cambridge University Press
- [5] Finnish Institute of Occupational Health (https://www.ttl.fi/en/) [Accessed: 02-2019]
- [6] FORSTEN-ASTIKAINEN, R., KULTALAHTI, S., MUHOS, M. 2018. Age-related Differences in Work Motivations: The Case of SMEs. In: *IEEE International Conference on Industrial Engineering and Engineering Management*, Volume 2019-December, 9 January 2019, Article number 8607806, pp.1031-1034.
- [7] HARTWICK, J.M. 1974. Price sustainability of location assignment, *Journal of Urban Economics* 8, Elsevier, **1**(2), pp.147-160.

- [8] ILMARINEN, J. 2006. *Towards a longer worklife!* Ageing and the quality of work life in the European Union, Publisher: FIOH, Helsinki
- [9] KUCHARČÍKOVÁ, A. MIČIAK, M., HITKA, M. 2018. Evaluating the effectiveness of investment in human capital in e-business enterprise in the context of sustainability, *Sustainability (Switzerland)*, **10**(9), 3211.
- [10] LORINCOVÁ, S., HITKA, M., BALÁŽOVÁ, Ž. 2016. Corporate culture in Slovak enterprises as a factor of HRM quality Case study, *International Journal for Quality Research*, **10**(4), pp. 719-732.
- [11] LORINCOVÁ, S., HITKA, M., CAMBÁL, M., SZABÓ, P. JAVORCÍKOVÁ, J. 2016. Motivational factors influencing senior managers in the forestry and wood –processing sector in Slovakia, *Bioresources*, **11**(4), pp. 10339-10348.
- [12] LORINCOVÁ, S., HITKA, M., ŠTARCHOŇ, P. STACHOVÁ, K. 2018. Strategic instrument for sustainability of human resource management in small and medium sized enterprises using management data. *Sustainability (Switzerland)*, **10**(10), 36871.
- [13] MALICHOVA, E., DURISOVA, M., KUCHARČÍKOVÁ, A., 2016. The influence of selected tools of economic policy on managerial decision making on investments, 27<sup>th</sup> IBIMA 2016 Innovation Management and Evaluation Excellence Visions 2020: From Regional Development Sustainability to Global Economic Growth, Soliman K.S., Milan, pp. 3752-3762
- [14] NAEGELE, R. 2000. Active strategies for older workers, Brussel: ETUI, pp.207-43.
- [15] NAEGELE, G.; WALKER, A. 2006 A guide to good practice in age management European Foundation for the Improvement of Living and Working Conditions, Luxembourg: Office for Official Publications of the European Communities 2006 VIII, 36 pp.
- [16] PÄIVÄRINNE, V., KAUTIAINEN, H., HEINONEN, A. et al. 2019. Relationships of leisure-time physical activity and work ability between different occupational physical demands in adult working men, In: *International Archives of Occupational and Environmental Health*, pp. 1-8.
- [17] SOCOLIUC, M., GROSU, V., HLACIUC, E., STANCIU, S. 2018. Analysis of social responsibility and reporting methods of Roman companies in the countries of the European Union *Sustainability (Switzerland)* **10**(12), 4662.
- [18] VRAŇAKOVÁ, KOLTNEROVÁ, CHLPEKOVÁ, A., CAGÁŇOVÁ, D. 2019. Application of Exact Methods in Employees Selection in Accordance with the Age Management Concept, *Mobile Networks and Applications*, 2019 in press.
- [19] WITKOWSKI, S. A., BARTOSZ, B. 2017. Psychological and organisational aspects of age management in organisations, *Management Poland*, **21**(1), pp. 81-94.
- [20] UNIZA (online) www.uniza.sk
- [21] ZIENTARA, P. 2009. Employment of Older Workers in Polish SMEs: Employer Attitudes and Perceptions, Employee Motivation and Expectations, *Human Resource Development International*, **12**(2).

#### **ORCID**

Emese Tokarčíková 0000-0002-7115-3499