

Age Management as a Challenge in Sustainable Human Resource Management and its Implementation in Slovakia**Ing. Natália Vraňáková, PhD.**

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ABSTRACT

The management of industrial companies is currently facing new challenges that may determine their competitive advantage and remain in the business market. One of the new challenges is the implementation of the age management concept. The main aim of the article is to present the results of the extent of age management implementation in industrial enterprises in Slovakia (N = 285 companies). The research identified three research questions, the evaluation of which yielded important findings. The pillar "Satisfied life" is considered from the point of view of industrial management to be the most important of all eight pillars of the age management concept. The most frequently applied pillar of age management in large industrial companies is the fifth pillar ("Ensuring good workability and motivation"). All findings can be used in sustainable human resource management as well as in designing the implementation of the age management concept.

Keywords: age management, diversity, large industrial companies, sustainable human resource management**1. Introduction**

At the beginning of the second millennium, the concept of age management began to take shape in the world. Although age management is a relatively well-known concept in general and its importance is also addressed at the European Union level, many industrial companies in Slovakia do not recognize this concept and do not apply functional measures of age management. The authors consider this fact to be an important prerequisite to creating a research framework. To manage the differences resulting from employee diversity and to take advantage of the positive aspects of cooperation of employees of different age categories, age management is the optimal concept for human resource management in organizations and companies. Employers, companies, and responsible employees must be able to work with different age groups of employees to achieve the set corporate goals. Another essential prerequisite for the successful implementation of the concept of age management in the practice of industrial companies is the fact that the implementation must be based on and be supported by a personnel strategy, which is then based on the company's strategy. Age management is a tool for sustainable human resource management and has a demonstrably positive impact on employee performance, which is reflected in organizational performance.

1.1 Theoretical background

Sustainability and human resource management are the two basic elements that bring together the approach and the gap that needs to be filled (Macke and Genari, 2019). Sustainable human resource management generally refers to a

concept that combines the idea of sustainability with a soft approach to human resource management (Piwowar-Sulej, 2021). The very concept of sustainable human resource management is constantly evolving and in general, sustainable human resource management is the adoption of human resource management strategies and procedures to achieve employee sustainability, employee regeneration and at the same time achieve financial, social, environmental, and other goals of the company to satisfy all stakeholders (Shuk-Ching Poon and Kei Law, 2022; Ehnert, 2014; Ehnert et al., 2016; Kramar, 2014). According to the authors (Mirčetić, et al., 2022), the model of sustainable human resources management contains three elements: individual (employee well-being, work-life balance, health, and employability), social (quality of life, and good employer brand), and organizational (health employees). The sustainable development of the organization is also associated with diversity management, while one of its goals is non-discriminatory behavior among employees of different ages (Ogbo and Kifordu, 2015). Keeping employees active and productive for a long time is also one of the important challenges for industrial companies (Grah et al., 2020). One of the tools to achieve this goal is the application and implementation of age management. Industrial management is called upon to support active aging in the workplace through a system of human resource strategies and good age management practices (De Rose, et al., 2019).

The concept itself deals with organizational activities aimed at maintaining the workforce and addressing the challenges posed by the position of different generations in the

labor market, maintaining the valuable knowledge of individuals retiring older workers, maintaining the productivity of older workers, and organizing the retirement process (Grah, et al., 2019). Due to the increasing retirement age as well as labor market problems, there can be no lack of human resource management tools aimed at aging human capital in the managerial decision-making process (Tokarčíková, 2019). To achieve successful, comprehensive, and controllable implementation of age management, the concept itself consists of eight basic pillars, which describe its essence (Hlatká, et al., 2021; Silhar and Szabova-Sirova, 2019; Čopíková, Bláha, and Horváthová, 2016; Cimbalníková, et al., 2012; Štorová and Fukan, 2012): Pillar 1 Knowledge of age issues the first pillar aims to be aware of the situation in the composition of the workforce and the associated aging of employees, early retirement and lack of workforce. Pillar 2 Accommodating attitude towards aging addresses the need for a positive attitude towards aging employees, focusing on their knowledge and experience, which needs to be used. Pillar 3 Management that understands individuality and difference aims to understand the responsibility to approach employees of all ages individually

within different generations. Pillar 4 Quality and functional measures of age management emphasize the appreciation and equality of employees of all ages and generations and also emphasize the need for lifelong learning and cooperation between different elderly employees. Pillar 5 Ensuring good workability and motivation deals with the growth of working capacity, which will lead to cooperation between aging employees to the extent that employees will work in the company until retirement. Pillar 6 High level of competencies focuses on leadership and management, which is fully aware of the concept of shared competencies and learning and ensures that the experience of older and more experienced employees is passed on to younger employees. Pillar 7 Quality work organization refers to work organization and working hours that are adapted to employees of different ages. Pillar 8 Satisfied life is focused on the recognition, well-being, and quality of life of older employees which has increased and employees can retire with dignity. In the following Figure 1, we can see the model of the issue depending on the research aim.

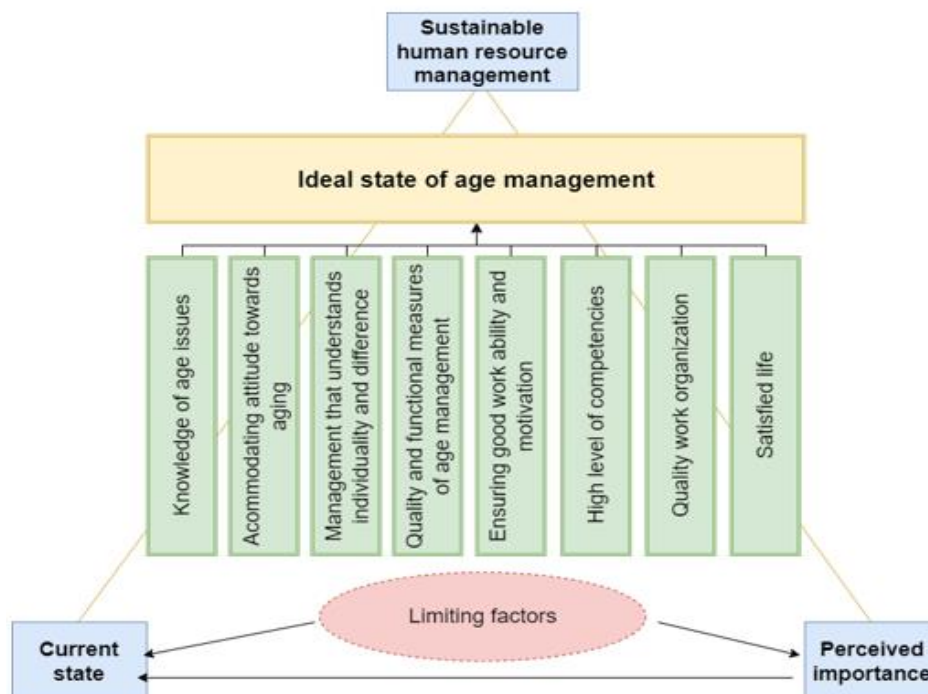


Figure 1: Model of issue depending on research aim (own elaboration)

Figure 1 represents the graphical model of the research aim. At the top is sustainable human resource management, which includes age management, and mentioned finding is supported by findings from the theoretical part. The ideal state of age management represents comprehensive implementation and at the same time, it is necessary to focus on all eight pillars, as each of them is equally important and occupies a substantial part of the whole concept. The authors of the article also focused their research on the perceived importance of individual pillars by the management of industrial companies. The perceived importance also affects the current state of

implementation of the age management concept in industrial companies, where it is important to compare whether the pillars that are considered important are applied in companies. Not only the perceived importance but also the current state of implementation is influenced by limiting factors that can negatively affect the comprehensive implementation of the age management concept. In the whole context, it is very important that age management is not only associated with older employees but is aimed at all age groups of employees, as its goal is a non-discriminatory approach to employees of different ages. The age management approach to human

resource management supports age-diversified teams and the synergy of employees of different ages. Synergy will ensure the sharing of knowledge, expertise, and experience of older employees. Sharing knowledge, expertise, and experience is an added value, especially due to the development of knowledge management in the company and the related maintenance of work performance.

Managers also have an important task, and if the know-how to work effectively with employees of different ages, the company can achieve better results, improve workplace safety, achieve a shift in occupational health, and reduce work stress (Pedro, et al., 2020; Ziolkowska, 2021; Lojda, et al., 2021).

1.2 Literature review

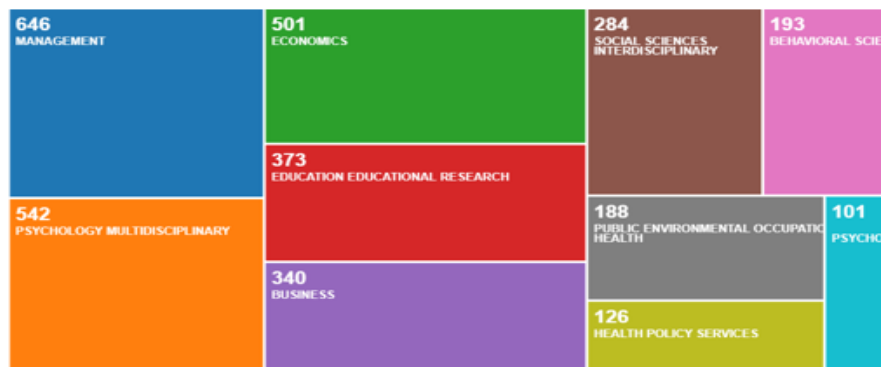


Figure 2: Analysis TOPIC: Age management in WOS (own elaboration)

The search returned 334,267 documents containing the topic "Age management". Subsequently, the authors implemented filtering, which took into account (Filter results by, Document Types and Web of Science Categories). The analysis shown in Figure 2 shows that the dominant area is Management (646 articles), followed by Psychology multidisciplinary (542 articles) and Economics (501 articles).

The authors then proceeded to the analysis of keywords related to the term "Age management". Software

VOSviewer was used for visualization, the data file was created from the SCOPUS scientific database. Search for "Age management" returned 38 256 documents. Based on the application of filters (document type, Subject Area, All Open Access, and sorting by cited (highest) in the SCOPUS database, 687 matching documents were found. Processing in the VOSviewer software can be seen in Figure 3 below.

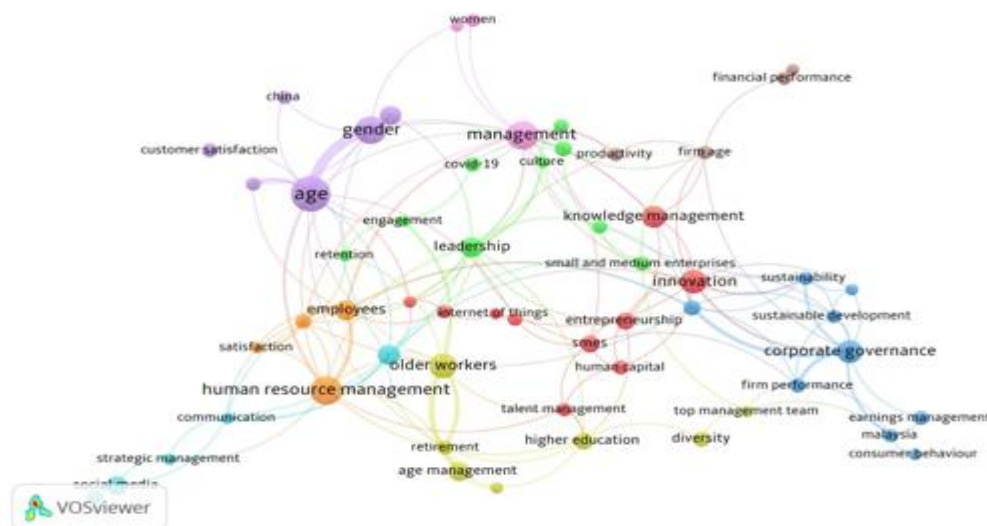


Figure 3: Visualization Co-occurrence (own elaboration in VOSviewer software)

The created EXCEL document with 687 matching articles by keywords was processed in the software using the Co-occurrence Author keywords analysis. The analysis in Figure 3 shows that the interplay of the authors' keywords is the dominant keywords: age, human resource management, management, corporate governance, older workers, innovation, and gender. All the above terms are directly related to the application of all 8 pillars of age management, which were processed in the previous part of the article 1.1 Theoretical background.

2. Material and methods

The following part of the article contains the definition of the main aim of the article and a description of the identified research questions. In the section Material and methods, the authors of the article described the method of data collection, the collection tool (questionnaire), and the methods used in the evaluation.

2.1 Research aim and research questions

The research was carried out as one of the project tasks Young Research Project No. 1358: *"Exploration of the factors influencing the workforce sustainability in industrial enterprises in Slovakia"*. The main aim of the research was to analyze the perception state of importance from the business management point of view and the age management degree of implementation in industrial companies in Slovakia. The results of the research will serve as a basis for creating proposals to improve human resource management in industrial companies.

Research questions:

RQ1: Which age management pillars are the most important according to the management employees?

RQ2: Which age management pillars are applied in Slovak industrial companies?

RQ3: Which of the factors are most limiting in the implementation of age management in industrial companies in Slovakia?

2.2 Data collection and research sample

The data needed to carry out the analysis were collected using a questionnaire, which was constructed by the authors of the article. The questionnaire used in the research contained seven questions (open, closed, and scale). The first three questions were focused on the characteristics of the industrial company (geographical location of the company, the sector of industry in which the company operates, majority ownership of an industrial company). The other four questions were focused on the main area of research (age management). The questionnaires were distributed to industrial companies electronically and physically. The questionnaire was primarily intended for the management of organizations (managers and top managers in industrial companies).

An important criterion for selecting an industrial enterprise was its size. In determining the size of the company, the authors took into account the priority criterion of the number of employees, according to the applicable legislation, these are companies that have 250 or more employees. A total of 330 questionnaires were distributed, 285 questionnaires were completed completely and correctly. It follows from the above that the questionnaire return rate was 86.36%, which can be considered as a good return. The collected data were processed using Microsoft Excel. To evaluate the data, the author's used methods of descriptive statistics (pie charts, frequency histograms, and tables of absolute and relative frequencies).

Based on the processing of the second question in the questionnaire, we know that the research involved industrial companies from the following sectors: automotive, transport and logistics, electrical engineering, energy and mining, chemistry and plastics, information technologies, metal production and metallurgy, agriculture and forestry, food industry, design and engineering, construction, machine engineering, production - other, development, and testing. The results can be seen in Table 1.

Table 1: Representation of industrial company by industry sector (own elaboration)

| Industry Sector | Absolute frequency | Relative frequency [%] | Cumulated frequency |
|---------------------------------|--------------------|------------------------|---------------------|
| Automotive | 52 | 18.25 | 52 |
| Transport and logistics | 39 | 13.68 | 91 |
| Electrical engineering | 31 | 10.89 | 122 |
| Energy and mining | 14 | 4.91 | 136 |
| Chemistry and plastics | 27 | 9.47 | 163 |
| Information technologies | 15 | 5.26 | 178 |
| Metal production and metallurgy | 26 | 9.12 | 204 |
| Agriculture and forestry | 3 | 1.05 | 207 |
| Food industry | 16 | 5.61 | 223 |
| Design and engineering | 3 | 1.05 | 226 |
| Construction | 21 | 7.37 | 247 |
| Machine engineering | 33 | 11.58 | 280 |
| Production - other | 3 | 1.05 | 283 |
| Development and testing | 2 | 0.71 | 285 |
| Sum | 285 | 100.00 | - |

Table 1 shows that the three largest groups of respondents are from the automotive industry (18.25%), transport and logistics (13.68%), and machine engineering (11.58%). These groups are dominant in the industrial sector in Slovakia.

The next question was focused on identifying the majority ownership of the industrial company (research sample). The possibility to choose the answer was a domestic company and a subsidiary (the parent company operates abroad). The evaluation of this question can be seen in Figure 4

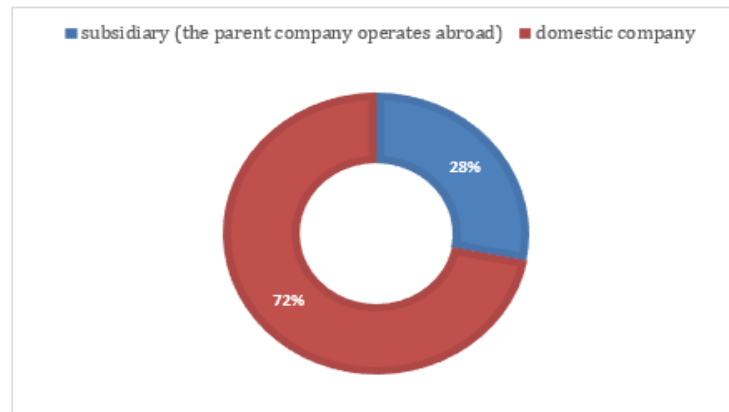


Figure 4: The relative frequency of respondents according to the majority ownership of the company (own elaboration)

Figure 4 shows that up to 72% of industrial companies have domestic owners and 28% of industrial companies have foreign owners. The processed data are presented in the Results section.

3 Results

The next part of the article contains the statistical processing of the results from the questionnaire. The results part is divided into the evaluation of research questions.

Evaluation of RQ1: Which age management pillars are the most important according to the management employees?

The evaluation of the first research question was performed in the MS Excel program, the authors first created a table that contains absolute frequencies of answers of managers who completed the research questionnaire. To take into account the significance of the pillar, the authors assigned coefficients from 1 to 5 to the individual levels of the scale as follows: 1 = not significant at all; 2 = insignificant; 3 = neither significant nor insignificant; 4 = significant; 5 = very significant. The result is the cumulative composition of the coefficient and the number of responses. The order of pillars by importance can be seen in Table 2 below.

Table 2: The importance of age management pillars according to management employees (own elaboration)

| Age management pillars / rating (possibility of answer) | 1 - not significant at all | 2 - insignificant | 3 – neither significant nor insignificant | 4 - significant | 5 - very significant | Result |
|--|----------------------------|-------------------|---|-----------------|----------------------|--------|
| 1. Knowledge of age issues | 12 | 60 | 141 | 644 | 175 | 1032 |
| 2. Accommodating attitude towards aging | 9 | 52 | 159 | 560 | 285 | 1065 |
| 3. Management that understands individuality and differences | 8 | 80 | 153 | 496 | 310 | 1047 |
| 4. Quality and functional measures of age management | 15 | 62 | 189 | 476 | 285 | 1027 |
| 5. Ensuring good work ability and motivation | 11 | 28 | 81 | 468 | 580 | 1168 |
| 6. High level of competencies | 11 | 36 | 102 | 448 | 550 | 1147 |
| 7. Quality work organization | 8 | 40 | 114 | 488 | 485 | 1135 |
| 8. Satisfied life | 7 | 22 | 75 | 440 | 660 | 1204 |

In Table 2, the values that are the largest for each column and which contains the rank of age management pillars according to significance.

Subsequently, the results were processed into a new Table 3,

Table 3: Age management pillars by importance (own elaboration)

| Pillar / Results | Average | Rank |
|---|---------|------|
| 8. Satisfied life | 4.22 | 1 |
| 5. Ensuring good work ability and motivation | 4.10 | 2 |
| 6. High level of competencies | 4.02 | 3 |
| 7. Quality work organization | 3.98 | 4 |
| 2. Accommodating attitude towards aging | 3.74 | 5 |
| 3. Management that understands individuality and differences | 3.67 | 6 |
| 1. Knowledge of age issues | 3.62 | 7 |
| 4. Quality and functional measures of age management | 3.60 | 8 |

It is clear from Table 3 that the information obtained from the Age Management Pillars Questionnaire can be evaluated positively. None of the pillars can be marked as insignificant in the overall evaluation. The "Satisfied life" pillar was rated the highest with an average value of 4.2. It is approaching a very significant value on the rating scale. This is followed by the "Ensuring good workability and motivation" pillar, which also has an average higher than a significant value. The last pillar "Quality and functional measures of age management" was in the last place in importance, followed by "Knowledge of age issues", which averaged 3.60 and 3.62.

Evaluation of RQ2: Which age management pillars are applied in Slovak industrial companies?

Evaluation of the second research question, which was focused on the current situation in the company, and thus on the current state of implementation of the pillars of age management in large industrial companies in Slovakia. Respondents had the option to choose one or more pillars, or they could indicate the option "We apply all the pillars listed" or "We do not apply any of the pillars listed". The summary results can be seen in Figure 5.

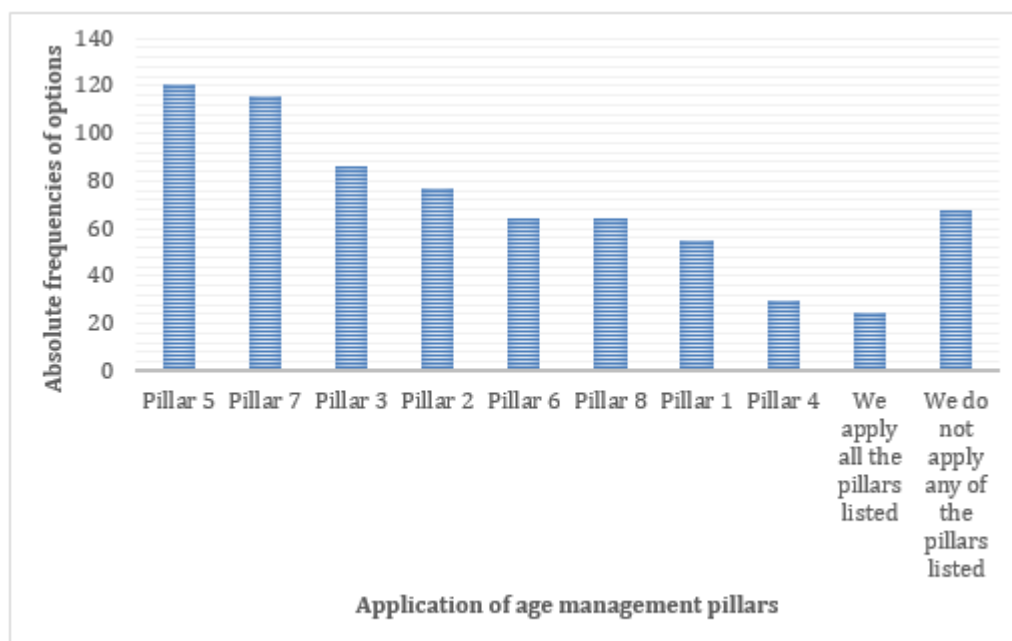


Figure 5: Application of age management pillars in Slovak industrial companies (own elaboration)

As we can see in Figure 5, pillar 5 is most often applied, followed by pillar 7, pillar 3, and pillar 2. The next most common answer is that none of the pillars of age

management is applied. At least 25 out of 285 companies apply all pillars. As stated in the theoretical basis for achieving the desired effect of sustainable human resource management,

it is necessary to apply all pillars and at the same time have the concept of age management applied in a formal form.

Evaluation of RQ3: Which of the factors are most limiting in the implementation of age management in industrial companies in Slovakia?

The last, third research question focused on limiting factors that can be considered as negative determinants in the application of the age management concept in Slovak industrial enterprises (Table 4).

Table 4: Factors influencing the application of age management (own elaboration)

| Factor / Frequency | Absolute frequency | Relative frequency [%] |
|---|--------------------|------------------------|
| Human resources - lack of employees | 153 | 27.77 |
| Financial resources | 148 | 26.86 |
| Human resources - lack of interest of employees | 126 | 22,87 |
| Company management | 68 | 12.34 |
| Company culture | 56 | 10.16 |
| Sum | 551 | 100.00 |

Table 4 shows that the most common factor that negatively affects the application of age management in Slovak industrial companies is human resources - lack of employees (27.77%), followed by factor financial resources (26.86%).

4. Conclusion and discussion

Based on the questionnaire survey, we can state that companies are aware of the importance of age management and related pillars, none of them reached an average that would be close to the values of insignificance. The most important pillar was "Satisfied Life", and research identified three main themes, "well-being", "good physical health" and "maintaining mental health", which promote good aging and satisfaction (Halaweh, et al., 2018). What is important, however, is the fact that the concept of Age Management is a complex system. One of the eight pillars cannot be ignored for quality implementation.

Based on the data evaluated in RQ2, it is possible to see the ranking of the individual pillars of Age Management based on their current application in industrial enterprises. The fifth pillar of age management is applied to the highest degree, and thus companies try to adapt to the work environment to motivate employees and increase their workability. The fifth pillar is followed by the seventh pillar, where work and working hours are organized in such a way that it is adapted to the requirements of employees. On the other hand, the fourth pillar is the least frequently applied, and thus the company lacks equality between employees of different ages and, among other things, lifelong learning. Consequently, the second least applied is the first pillar, and thus there is no disseminated information at the company level on the issue of the composition of the workforce, the aging of employees, and the lack of young employees. The "We apply all the pillars listed" option was identified by 25 managers, which represents 8.8% of the companies involved in the questionnaire survey. Although not every company has implemented pillars regarding age management, there is a great precondition for these companies to successfully apply the whole concept. The

option "We do not apply any of the pillars listed" was identified by 68 management employees, which represents a quarter of companies from the questionnaire survey. According to research (Pinto, da Silva Ramos, and Nunes, 2014), the most important human resource management practices for employees of all ages include reward, recognition, participation, and lifelong learning.

Based on the **RQ3** evaluation, we can see that according to the management of large industrial companies, human resources - lack of employees are identified as the biggest limiting factor, which means, among other things, that there is a lack of qualified employees in industrial companies. This finding needs to be linked to the answers to the previous questions when managers marked the "Knowledge of age issues" pillar as penultimate in terms of importance and application. Without a real application of the first pillar, it will not be possible to achieve that companies will have enough qualified employees. The second most limiting factor is financial resources, followed by a lack of interest on the part of employees. 24% of the participating managers of industrial companies indicated that the company's management limits the implementation of Age Management.

The current situation in the field of industrial enterprises in Slovakia focuses more on competitiveness and profit (financial performance), often at the expense of employees. The situation may be similar in other countries, as the adoption of age management practices by companies is still in its infancy and more attention is paid to factors related to maintaining employees in the company (Tonelli, et al., 2020). However, if the company's management wants to ensure prosperity and sustainably manage human resources about the age and potential of employees, they should include Age management in the strategic goals in the area of personnel and take it seriously. Although Age management and human resource management, in general, are among the "soft" components of management, they can significantly affect the prosperity of a company. The consequences of an aging population are visible at various levels, affecting individuals, organizations,

economies, and societies (Gorzen-Mitka, Sipa, and Skibinski, 2017). Employees are a key resource for the company, so it is important that the company constantly monitors their needs and ensures their satisfaction and workability. On the other hand, employees must also be aware of their importance in the whole process, behave responsibly and with their approach contribute to the restoration of their employability and also to the maintenance of working capacity.

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