

Article

# Impact of Age Management on Sustainability in Czech Organisations

Hana Urbancová <sup>1,\*</sup> , Lucie Vnoučková <sup>2</sup> , Zdenek Linhart <sup>3</sup> , Gabriela Ježková Petřů <sup>1</sup>, Roman Zuzák <sup>2</sup>, Lenka Holečková <sup>4</sup> and Zita Prostějovská <sup>2</sup>

<sup>1</sup> Department of Human Resources, University of Economics and Management, Nárožní 2600/9a, 158 00 Prague, Czech Republic; gabriela.jezkova.petru@vsem.cz

<sup>2</sup> Department of Management, University of Economics and Management, Nárožní 2600/9a, 158 00 Prague, Czech Republic; lucie.vnouckova@vsem.cz (L.V.); roman.zuzak@vsem.cz (R.Z.); zita.prostejovska@vsem.cz (Z.P.)

<sup>3</sup> Department of Marketing, University of Economics and Management, Nárožní 2600/9a, 158 00 Prague, Czech Republic; zdenek.linhart@vsem.cz

<sup>4</sup> Department of Business Economics, University of Economics and Management, Nárožní 2600/9a, 158 00 Prague 5, Czech Republic; lenka.holeckova@vsem.cz

\* Correspondence: hana.urbancova@vsem.cz

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**Abstract:** Age management is becoming an increasingly important part of strategic human resources management practices and can ultimately lead to a competitive advantage. Research results confirmed that a strategic focus on the efficient use of all age categories of employees yields retention, the successful achievement of organisation goals, development, and, ultimately, a competitive advantage. The aim of this article is to identify and evaluate approaches to age management practices in organisations in 1271 organisations in the Czech Republic. Quantitative research was carried out in selected organisations operating over a three-year period. Data was gathered from these organisations and evaluated using descriptive and multidimensional statistics. The results show that those organisations focusing on the application of age management practices achieved a competitive advantage regardless of size or sector of the organisation. Statistical analysis ( $\chi^2$  test, Cramer's V, factor analysis) on survey data shows that many of these organisations achieved significant perceived benefits from the application of age management. The approach to age management application varies in organisations depending on whether it is an internal branding of an employer or response to a crisis. Organisations either use of best practices to implement age management or it is a carefully planned process in advance. Follow-up research can focus on the use of age management in crisis management or employer branding. This study is a non-experimental quantitative correlation analysis utilising longitudinal empirical data.

**Keywords:** age management; advantage; sustainability; competitiveness; organisations; generations; survey

## 1. Introduction

In many Western countries, the population curve has changed dramatically over the last decade, and as a result of these changes, the need for organisations to understand the complexities of their workforce and how best to maximum its potential. This is the focus of age management, which targets all age groups of employees, and develops strategies to create a forward moving organisation focused on corporate goals. However, the age structure of the population and employment policy puts pressure primarily on retaining employees over the age of 50, and in many cases also lead to

organisational reforms [1]. These reforms lead to new age management challenges that are primarily aimed at answering questions about how to formulate workload and working conditions so that these employees work efficiently for the organisation and, more importantly, not to lose organisational knowledge of those retiring. Research conducted by [1] shows that organisational reform of working conditions should meet the employment requirements of all employees with emphasis on those over the age of 50, given their tenure and organisational knowledge, as confirmed by a study by [2]. The research focused on conditions for the performance of managerial positions in the public sector, which would lead to the permanent retention of managers' ability to perform their positions. Authors [2] address the requirements for the position and human resources as well as the balance between them, which, in the long term, would lead to the sustainability of workers in their positions for successful labour management. This approach requires new practices, which are characterized primarily in the Person-centred approaches addressed by [3]. This new approach provides a valuable insight into the current interaction of diverse sustainability of employment in today's highly heterogeneous population and provides better access to careers for older workers and, above all, fulfilment of job requirements [3]. Organisations now have to focus primarily on employees over the age of 50, given their institutional knowledge and replacement, thus, age management becomes an increasingly important subject. Hence, a new challenge for human resources to identify and create policies centred on this segment of the workforce, the new area of age management.

Although recent scientific studies focus mainly on organisational policy in terms of employing people over 50, [4] carried out a study that does not come from the age range of employees, but conceives higher age as an added value from two perspectives, in terms of motivation to job description and in terms of job description as a motivation for employees. The main attributes are the continuing experience of workers, which can be beneficial to the organisation and represent a competitive advantage compared to other organisations. From this perspective, it is necessary to distinguish between the subjective age of workers and the actual age of workers, as this is also the focus of age management [4]. In his study [5], revealed that the volatility of employees is different in every organisation. The results show that the perceived possible performance of elderly employees is dependant more on deep acting than their younger colleagues. It can be summarised that among, on average, elderly employees, extensive use of deep acting was related to positive differences in perceived workability but it is not the case of most of younger employees. For younger generation, surface acting was not found.

Currently, an aging population is a frequently discussed phenomenon in society, given the long lifespan of individuals and their ability to continue employment. The changing demographic situation brings the necessity of new approaches, not only to governmental and private fiscal systems, but also for employers. Economically active populations divert more resources and draw less [6]. Employers gradually change their attitudes towards older workers, who are often bearers of frustration, and their loyalty and motivation are different from younger employees. Research shows that a motivated and satisfied workforce brings benefits, not only to organisations themselves in terms of higher performance, but also to the whole economy [7], and as such, age management becomes more important. Results show the increasing number of migration. Authors [8] shows the increasing migration of Czech nurses. Author [9] shows a relationship between Czech workers and the British labour market, where the age structure of the population and the increasing migration of the workers influence the recruitment of the employees as more experienced workers are sought after.

Based on the above mentioned, it can be concluded that the behaviour of organisations is increasingly focused on age management. Identifying the impact of age management on organisations is an important prerequisite for achieving long-term sustainability. Emphasis on improving the quality of personnel processes support the performance and prosperity of an organisation, by eliminating bottlenecks in these processes. Application of age management helps achieve sustainability of both human resources within the organisation and relatively lasting competitive advantage. By eliminating the bottleneck and focusing on applying age management and effectively sharing knowledge among

generations of employees, organisations will turn these trends into a performance factor and thus improve the performance of processes and the entire organisation.

This study investigates and presents results of successful application of age management and shows possible ways of its implication for organisations who may lack internal experienced workers. The study also identifies key success practices of age management for innovative organisations.

The focus of this paper is to identify and evaluate approaches towards age management practices in organisations to achieve sustainable competitive advantage. This article consists of five parts which includes introduction, theoretical background of the work, material and methods, results and discussion. The conclusion summarises the research, its implications and limitations.

## 2. Theoretical Background of the Work

### 2.1. Strategic Focus on The Sustainability of Generations

Good management practice is assumed to be the product of a good knowledge base and its application, not least in Human Resource Management (HRM). Managers are always fully cognisant of the main body of research evidence related to specific HR practices. Practitioners are more likely to access required knowledge for applications through popular sources rather than more reliable ones due to time constraints, inaccessibility and inability to evaluate evidence [10]. Consequences of conflict of interest of HR managers generates biased structure of generations of employees in both work, and leisure, which cause dissatisfaction. Later, “*generational differences moderate the relationships of work-to-leisure conflict–leisure satisfaction, work-to-leisure conflict–psychological well-being, work-to-leisure conflict–job satisfaction, and leisure-to-work conflict–job satisfaction*” [11]. If it is not possible to over compete with other generations then bad habits are copied. Whereas imprinting and organisational learning are often associated with a “positive halo effect,” they have the potential to result in negative behaviours and deleterious firm-level outcomes [12]. Copied bad habits occur due to the organisation’s perceived performance when studying managers’ attitudes and career outcomes. A study of 182 managers revealed that poor perceived organisational performance is significantly related to greater work-to-family conflict. It was also found that while sources of supervisor support tend to lessen the work-to-family conflict of managers who perceive strong organisational performance, they tend to have little benefit for those who perceive poor organisational performance. Only high time availability was shown to buffer the negative relationship between perceived organisational performance and work-to-family conflict [13]. Therefore, we sought to discover the relationship between misbalance of generations and such managerial priorities as keeping of key or talented employees, motivations, organisational climate, culture, prestige, competitive advantage, resistance to crisis, increased performance, and others.

The literature has shown that as generations advance, family employees will be less committed to the family firm [14,15]. Therefore, such issues of age as career perspective, ageing, early retirement, and lack of young employees were compared with the above managerial priorities. The positive effect of motivation-enhancing practices for family employees is higher as the generations advance [16], and is surprising because young members of family businesses should accept delayed income if a higher career is on reach. Today’s workforce sees all types of career changes at different stages of life due to changes in personal situations. The benefit of hiring the inexperienced or green employees are considerable, especially when it comes to cost. Inexperienced or green employees should not directly correlate to younger employees because of career changes, workforce displacement, and possibly labour. Advantages of green hiring and green training are researched and identified in the study of [17]. However, older employees behave according to green hiring and training, not to business competitiveness or development. Jerónimo et al. state “*Results from a sample of 275 Portuguese employees, analysed through the fuzzy-set qualitative comparative analysis (fsQCA), shows that perceived ORS is mainly grounded in green hiring, and to a lesser extent, in green training. Green hiring is especially important for older employees, whereas younger employees require green training. Green compensation is surprisingly irrelevant.*”

*The study is useful for researchers and practitioners who seek to understand employees' perception about the value and priority their organisations given to sustainability* [18]. Therefore, correlation, if any, needs to identify whether association of managerial priorities of both performance and age with green hiring and training opens a possibility to soften stress level for older employees before they retire. Author [19] identified that the implementation of green human resources management practices influences the sustainable performance of the organisation, especially in green hiring. It can be summarised that green recruitment is an important part of Green Human Resource Management, which includes five dimensions—recruitment, training, performance management, pay and reward and involvement [20]. Many companies, as part of their company's environmental responsibility, use green criteria when choosing new employees as well as attracting candidates with a pro-environmental attitude [21].

Age management is now a major part of the overall talent management of ageing talented employees as well as human resources management. *"A new breed of talent management practitioners is developing an HR stack that includes other management frameworks such as design thinking, agile management, behavioural economics and analytics to augment their HR competencies. Organisations will be unable to reinvent their existing talent management practices in a sustainable way unless they broaden the talent management conversation"* [22]. Therefore, level of management servicing and proliferating differences between differently talented employees was confronted with knowledge transfer from age 50+ employees to the younger generation in our questionnaire.

Sustainability of generations of employees is dynamic due to overlapping performance and age-related factors. In their study [23] stated that *"To determine the weight of the factors identified based on the lack of independence of the factors; Fuzzy AHP and Fuzzy Type-2 DEMATEL were applied. The results indicated that environmental dimension was one of the effective factors and was considered the cause; however, social and economic dimensions were affected and considered the effects. Environmental factors were the most important ones"*. Therefore, we asked how dynamic are such organisational settings like labour hours, social structure, and ergonomics for different age groups of employees? Confusion of performance and age management was decreased by the question generation method for Human Resource Performance Appraisal. It has outperformed the traditional manual method [24]. We were also curious whether the relationship between performance and age management contributes to a competitive advantage in different sectors of national economy differently.

## 2.2. Impact of Age Management on Competitive Advantage

Most developed countries face an increasing average age of population and thus changing labour market structure due to low birth rates and increased lifespan [7]. According to the European Union, the share of the population aged 65 or more has increased by 2.8% between 2008 and 2018 in the EU-28 [25]. As a result, the proportion of working population decreased while the number of retired increased. Estimates that by 2100, the proportion of the population over 65 will be significantly higher than in 2018 [25]. Eurostat's projections show the problem of increasing the average age of older population itself. In January 2018, the old-age dependency ratio for the EU-28 was 30.5%, which means that there were three persons of working age for each person older than 65 years [25]. This ratio increased over the last decade by 5.0 percentage points and its growth is expected to continue [25]. The increasing age of the population leads to efforts by governments to change pension policies and increase retirement age. At the same time, organisations are gradually changing their attitudes towards older workers and looking for ways to use their acquired knowledge skills.

All companies strive to achieve a competitive advantage, which ultimately translates to the maximisation of shareholders' value. A competitive advantage is seen as an above-average rent that reflects an organisation's ability to provide greater value to its customers over the long term [26]. In the 1980s, two basic approaches to achieving competitive advantage by organisations were formulated [27]. The first, was based on operating in an attractive sector and taking a better position in it than its competitors. The second, was based on the ownership of resources that are unreachable for other competitors [28]. Over time, resources that are rare, valuable, and inimitable and non-substantiable

have been shown to achieve competitive advantage [29]. Organisations need to be able to identify these resources while having the ability to use them to achieve a competitive advantage [30].

In further historical development, it has been recognised that the conditions of resource utilisation to achieve a competitive advantage can be met by intangible assets that are sourced by people and their capabilities, which, at the same time, must be crucial to achieving strategic goals [31]. Each person is an original and unrepeatable individual and thus becomes a rare and valuable resource, which, moreover, is able to achieve originality in problem solving by its creativity and, thus, is the main source for achieving a competitive advantage [32]. Therefore, one's ability to become competitive is the decisive factor in achieving competitive advantage and increasing the performance of organisations [33].

Knowledge that people have plays an important role in the quality of decision-making. Knowledge of employees, especially those with tenure, in organisations and their use is an essential resource for achieving competitive advantage and achievement of organisation goals. Another essential feature of knowledge is that they contribute to the long-term sustainability of competitive advantage [34,35]. Organisations oriented on knowledge-based strategy achieve better results, higher performance and become market leaders [33,36,37]. This is particularly pronounced in sectors where there is a high dynamic of innovation. Loss of this dynamic leads to a loss of the market leader position [38,39]. On the other hand, organisations that do not create the conditions for knowledge management and the knowledge strategy in development are lagging behind their competitors and, over time, the asymmetry between them increases [40,41]. Knowledge is becoming an important resource for coping with uncertainties and turbulence and the resulting influences and threats that may lead to crises in organisations or even to the termination of their business activities [35,36,42].

As in the case of strategic management, it is essential that knowledge-related processes are managed [32] and aim to increase productivity and creativity, thus creating a higher output potential of the organisation [33]. Knowledge management should focus primarily on three basic aspects: knowledge creation, acquisition and transfer [37]. One of the objectives of knowledge management should be to achieve its long-term sustainability and continuity. This is achieved primarily through the systematic planning and implementation of the succession of its knowledge employees [43,44]. This is associated with another condition that should be achieved, namely, the ability of internal flexibility and external adaptability to changes in the environment [35].

The sustainability of a competitive advantage is mainly dependent on achieving continuity of knowledge in organisations, and their further acquisition corresponds to and responds to the development of the environment [45,46]. One of the important tools for achieving long-term knowledge continuity is the incorporation of age management into knowledge management and strategic management of the company, thus achieving vertical knowledge transfer [47]. This implies that age management can not only be seen as creating conditions for utilising the capabilities of older workers in organisations, but as a possibility of vertical transfer of tacit knowledge, which is important for the strategic decision-making of companies and their long-term success [48–50].

### 2.3. Selected Age Management Aspects Forming Competitive Advantage

Aging, as a separate human resource management issue, has been mentioned repeatedly in the literature relating to age management and organisational growth. A study published in April 2019 examined 81 articles which discussed aging published in 2002–2017 in the Finnish journal *Economic Life (Talouselämä)* [51]. The findings of the study showed that aging was mainly discussed in relation to social impacts. At the individual level, the effects of aging on work performance were addressed. The discussion of aging solutions at the organisational level, as one of the responsible actors, was limited or omitted in the articles [51]. In a separate study conducted in Brazil in 2018, it was found that private organisations with advanced HRM systems employ significantly fewer workers over 50 years of age than the labour market structure [52]. In many countries, employees are considering continuing to work after they reach the official retirement age [51,53]. They are often confronted with challenges of a rapidly changing environment and new requirements, and often face age discrimination [53–55].



Human Resource managers have to find an approach to minimise age discriminations and proper instruments such as part-time opportunities, flexible working hours, and adjusted benefits that will make better conditions for employees [55].

Age management, as practiced in most organisations, focuses on all age categories and not isolating one specific age segment. A number of different studies found that targeting different age groups with different research concepts can impact on application of tools for support of employment development which are different in different age groups [56]. A study examining how career support tools are connected in relation to worker satisfaction levels showed that younger workers are more satisfied when the level of instruments is high, while in older age groups satisfaction is higher when support is lower [56]. A separate study examining the relationship between flexible working time and performance concluded that formal measures allowing flexible work had a negative impact on performance but a positive effect on job satisfaction [57]. In another study conducted in South Africa in 2018 which compares internal and external motivation factors of three different generations in one workplace [58], the study concluded that there were no significant differences in the level of satisfaction and facts of internal motivation but identified the need for autonomy of the Generation A and Generation Y groups [58].

The importance of age management and human resource management with focus on the requirement of an ageing workforce is mentioned in the study of [59]. The authors stated that knowledge-based economy is focusing on human capital as a key source of companies' strongest competitive advantage. That is why human resource managers have to find ways to maximise human capital for organisations that view learning as a key priority to be successful in the future. Authors [59,60] dealt with the importance of managing human resources and other internal and external organisational and financial factors that are important for enhancing the competitive advantage of organisations.

There are many variables that closely connect age management to competitive advantage of organisations, one of which is life-long learning. Authors [59] mentioned that life-long learning increases human capital and is necessary for organisations to encourage all their workers in all age categories to participate in training and development activities. Further, they indicated that due to the rapidly changing environment and conditions, it is necessary to increase skills. Up-to-date knowledge and skills enable employees' faster adaptation to be in accordance with internal and external organisational demands. This also allows maintaining at all conditions. This topic was mentioned also in the study of authors [61], which dealt with differences between the drivers of workshop attendance and the participation in training and informal learning.

Occupational safety and health management plays also an important role in age management. The influence on motivation of workers was researched by [62]. The authors researched the possible impact on workers' motivation in two main areas related to leaders: demographic (gender and age) and professional development (tenure, prior career experience in the business and development activities). The results show that the characteristics of leaders' development specified above significantly affect workers' motivation.

Another important element of age management element is age diversity. The authors [60] tested the effect of age diversity on organisational performance among multinational businesses. A result of a resource-based view of an organisation is that age diversity among workers impacts organisational performance. Productivity of workers connected with the age diversity among employees was also discussed by the authors [63]. They researched the impact of employee age and industrial experience on extrinsic psychosocial stressors that may influence the productivity of workers. Their study concluded that firms need to mitigate the work environment-related psychosocial stressors in young workers, such as, over congestion and inaccessibility to different tools, high temperature and workspace atmosphere.

The study by [64] focused on employee relationships to their work position and the degree of workaholic. The results showed that the greater the passion or enthusiasm for the work performed in the 50–60 years age group, the more their degree of workaholicism increases [64]. As confirmed by the

study presented by [65], the concept of age management also focused on supporting the perception of attitudes, respecting the passion of older workers associated with their attitude to life and job satisfaction they prefer [65]. Not only the employees' age diversity is mentioned in the literature, but also age diversity or birth order of chief Executive Officer (CEO)s. The authors [66] dealt with the importance of birth order on CEOs and their strategic decisions. CEO birth order is positively associated with strategic risk-taking, with earlier-born CEOs taking less risk than later-born CEOs. Similarly, the authors [67] were focused on the importance of CIO's activities. Their conclusions stressed that managing projects, interacting with top management teams, optimising organisational processes and, last but not least, making strategic decisions are the crucial CIO activities. Their research shows that the importance of these activities is dependent on characteristics of the CIO's, such as age or the business hierarchical structure.

Another element is connected to employment exit and the retention of employees in an organisation. Authors [32] mentioned the strategic importance of this element in connection with the age of employees. Specifically, life development opportunities, work environment, work-life balance, and employee engagement were rewarded for retention of impacted developers. The transition to retirement plays also an important role. According to [68], it can be summarised that the efficiency and usability of a late career depends on strategic business goals of each firm. Authors [69] mentioned that most mature organisations face a major decline in performance at some time during their existence. On the other hand, according to [59], mature employees play crucial roles in the workforce of an organisation. The reason for this phenomenon is that the supply of younger workers starts to be depleted. Organisations that retain mature employees are at an advantage to secure competitive advantage over those that neglect demographic trends. The study also indicated that it is also necessary to mention that ongoing education and training of mature workers are one of the most important determinants of prolonging working life. The results of [69] proposed a preventive approach to early implementation of turnaround strategies. Accordingly, they presented the model "Anti-Aging" framework that opens an opportunity for the senior management of a mature organisation to respond earlier to organisational decline and avoid the trauma associated with challenging conditions. The next important factor is connected with career development and requalification. According to the results of [61], the workshop attendance is important in acquiring state-of-the-art knowledge on external developments as a dominant source of competitive advantage for the organisation. Furthermore, workshop attendance is positively related to individuals' level of education. Especially in workers' mid-career years, attending workshops appears to be an important mode of learning.

Age management becomes a crucial part of human resource management and strategic processes in many organisations currently nowadays. Therefore, this study investigates and presents results of successful application of an age management program and shows possible ways of its implication for organisations that lack experience in this aspect of human resource management.

### 3. Materials and Methods

#### 3.1. The Study Population And Sample

Quantitative data were obtained by a questionnaire survey in Czech organisations, ( $n = 1271$ , in three phases of survey, quota-based selection). The sample tested mirrors the distribution of organisations in the Czech Republic based on data from Czech Statistical Office, e.g., sector of economy. This consisted of 20% from primary sector, 20% from secondary sector, and 60% from tertiary sector. It also represented the size of Czech organisations: 60% small; 20% middle; 20% large. Ownership of organisations: 50% organisations with majority Czech ownership; 50% organisations with majority foreign ownership.

The sample was based on the ALBERTINA database of organisations, a unique database that contains important data of more than 2,700,000 organisations registered in the Czech Republic. In total, 860 different e-mails were sent out in every phase of survey to owners or management of organisations,

the return rate was 63.8% in the first phase, 57.2% in the second phase and 26.7% in the third phase (average 49% for all period). The questionnaire was completed by individuals within middle or higher management of the addressed organisations; in case of smaller organisation, by the owner itself (thus the responses reflected the point of view of their heads/owners/managers). The sample size is representative of the generalised set of organisations.

### 3.2. Questionnaire

The questionnaire was designed to comply with ethical rules and the requirement for anonymity, and contained 23 questions and 7 identification questions. The questions were both closed-ended, allowing only one option for response, and open-ended, allowing more options for response. The characteristics of organisations participating in the research (n = 1271) were as follows:

- Sector of economy: 10.7% from primary sector; 19.4% from secondary sector; 69.9% from tertiary sector.
- Size of organisations: 45.9% small; 25.4% middle; 28.7% large.
- Ownership of organisations: 76.2% organisations with majority Czech ownership; 23.8% organisations with majority foreign ownership.

### 3.3. Data Collection Process

The research design of this study is a non-experimental quantitative correlation analysis utilising longitudinal empirical data. The total number of participating organisations was 549 in the first year, 492 in the second year, and 230 in the third year (see Table 1). The selection sample size was defined using the Krejcie and Morgan (1970) formula ( $N = 2,700,000$  from ALBERTINA database, the required confidence level at 95% (standard value of 1.96), the acceptable deviation rate  $d = 0.03$  and the expected deviation rate  $r = 0.04$ ). Using this statistical approach to sample size computation and based on the above-mentioned deviations, the minimum number of respondents in every phase was set at 164, which was met by the conducted survey.

**Table 1.** Number of organisations in every phase of survey.

Phase	1st year	2nd year	3rd year
Age management survey	549	492	230

Source: Application and own processing.

According to [70], the construct reliability of age management effects (see Tables 2 and 3) was tested and validated by the Cronbach's Alpha coefficient. The Cronbach's Alpha coefficient was calculated by using IBM SPSS statistics Software. The value of the coefficient is higher than 0.8, which is a high level, and the construct hence can be considered as reliable. The value must be greater than 0.7. The value of Cronbach's Alpha coefficient was 8.3 for this construct.



**Table 2.** Areas of age management effects.

	Number	Mean	St. dev.
Retention of key employees (A)	1271	0.20	0.399
Recruitment of talents (B)	1271	0.14	0.346
Motivation and performance upgrades within current employees (C)	1271	0.14	0.345
Improvement of org. climate (D)	1271	0.14	0.342
Improvement of org. culture (E)	1271	0.11	0.309
Improvement of org. prestige (F)	1271	0.07	0.263
Building of employer brand (G)	1271	0.08	0.272
Setting of org. culture (H)	1271	0.06	0.239
Improvement in crisis management (I)	1271	0.04	0.202
Improvement in org. performance (J)	1271	0.12	0.324

Source: Application and own processing.

**Table 3.** Perception of age management effects by organisations.

Effects	Absolute	Relative
Retention of key employees (A)	YES 253	19.9%/80.1%
	NO 1018	
Recruitment of talents (B)	YES 176	13.8%/6.2%
	NO 1095	
Motivation and performance upgrades within current employees (C)	YES 175	13.8%/86.2%
	NO 1096	
Improvement of org. climate (D)	YES 172	13.5%/86.5%
	NO 1099	
Improvement of org. culture (E)	YES 136	10.7%/89.3%
	NO 1135	
Improvement of org. prestige (F)	YES 95	7.5%/92.5%
	NO 1176	
Building of employer brand (G)	YES 102	8.0%/92.0%
	NO 1169	
Setting of org. culture (H)	YES 77	6.1%/93.9%
	NO 1194	
Improvement in crisis management (I)	YES 54	4.2%/95.8%
	NO 1217	
Improvement in org. performance (J)	YES 151	11.9%/88.1%
	NO 1120	

Source: Application and own processing.

### 3.4. Data Analysis Methods

The descriptive statistics tools included absolute and relative frequencies, dependence tests ( $\chi^2$  test) and tests of strength dependence (Cramer's V) mainly, the null hypothesis was rejected in the case if the  $p$ -value was lower than  $\alpha = 0.05$ . Once the descriptive statistics results were obtained, and two-dimensional tests shown adequate results, the factor analysis was performed (multivariate statistics). The correlation table was calculated, and the correlation coefficient showed enough quantity and quality of coefficient levels and significance levels. Therefore, it was possible to use multidimensional methods according to [71]. Firstly, the principal component analysis was calculated, as this is factor analysis without rotation of variables. Again, also, this analysis has shown adequate results. Finally, the factor analysis using Varimax method and the Kaiser-Guttman rule for the selection of substantial factors was calculated. The data were processed only if the value of substantial factors was greater than 1 [71]. The loadings of factor variables were considered significant when the value of each loading was exceeding 0.3. The IBM SPSS statistics Software was used to evaluate the data.

The factor analysis was conducted to find groups of variables which represented responses of organisations regarding their perception of the importance and aspects of age management.

The goal was to find groups of variables with significant appearance and consistent content, and at the same time, to reveal main orientation and preferences and organisational practices of coherent groups of organisations. The results may help to identify different approaches to age management, human resource management and used practices of organisations regarding sustainable management of ageing generations in the labour market and, also, at the same time, to maintain organisational competitiveness. The results of analyses and formed factors may help to reveal the current approaches and practices in organisations, the orientation of employers and labour market. The factor analysis provides a higher level of generalisation of results to help focus on the most important and highly recommended areas with filtering out inconsistencies (which may be studied separately as outstanding values which, in turn, may also be inspiring for sustainable development).

#### 4. Results

The development of strategic management in organisations anticipates constant changes in the managerial paradigm in connection with the development of the whole company, especially in accordance with the principles of sustainability. Organisations' management must continuously take into account the competitive environment and new challenges and trends, which must be reflected in the setting of individual personnel activities. At present, the area of human resources management must become an integral part of the strategic orientation of any organisation and personnel activities performed not only at the partial management level, but with a comprehensive view of the development of the whole organisation in the upcoming years. One of the current directions in human resource management is age management, which takes into account current demographic conditions to meet the goals of organisations in the field of strategic and sustainable human resource management, but also focuses on anomalies brought about by social conditions

The need to reflect changes in human resource management and to apply trends in this area is possible through the creation of such internal conditions that make the application of personnel processes more effective. This is crucial to manage the organisation strategically and to set correct organisational processes: financial, personnel, process or social.

##### *Results of the Quantitative Research*

Based on the data evaluation, this chapter presents the results of the study and characteristics of variables surveyed (Table 2). Within all surveyed organisations, all below-mentioned effects were confirmed in practice as impacts of age management successful implementation. Not all effects were seen in all organisations. The concrete results per organisations are displayed in the following Tables. For the results presented in Table 2, the respondents were checking from a list of possible answers to select those, which are relevant for the specific organisation.

As indicated in Table 2 and also concretely below in Table 3, surveyed organisations mainly declared effects of age management in the improvement of employee retention, followed by improvement of talent recruitment, improvement in motivation and performance of current employees, improvement in organisational climate and organisational performance. The results in Table 3 were taken from outputs of questions where responses were dichotomous.

Age management is applied and regularly used in 351 from searched organisations in the Czech Republic (27.6%); most of the organisations, 920 (72.4%) are not applying the full concept of age management, but most of them stated they are planning for applying it in the following five years based on strategic reasons. Table 4 shows dependencies of the age management application in searched organisations based on organisational characteristics. Table 4 shows relationships by the correlation between two different groups of variables. The details of each type of organisation are shown in Tables 5–8.

**Table 4.** Application of age management (AM) based on organisational characteristics by  $\chi^2$  test.

	Absolute	Relative	<i>p</i> -Value/Cramer's V		
			Size	Sector	Ownership
AM application	351	27.6	0.000/0.154	0.000/0.133	0.191/-

Source: Application and own processing.

**Table 5.** Contingence of AM application based on organisational characteristics.

Age Management Application	Size			Sector			Ownership	
	Small	Middle	Large	Primarily	Secondary	Tertiary	Czech	Foreign
YES	134	77	140	33	60	225	235	116
NO	450	246	224	103	186	539	733	187
Total in column	584	323	464	136	246	764	968	303
Total		1271			1271			1271

Source: Application and own processing.

**Table 6.** Impact of AM on career planning.

Age Management on Career Planning	Size			Sector			Ownership	
	Small	Middle	Large	Primarily	Secondary	Tertiary	Czech	Foreign
YES	60	42	78	18	34	114	112	68
NO	67	34	60	14	25	105	116	45
Total in column	127	76	138	32	59	219	228	113

Source: Application and own processing.

**Table 7.** Impact of application of AM on competitiveness.

Age Management on Competitive Advantage	Size			Sector			Ownership	
	Small	Middle	Large	Primarily	Secondary	Tertiary	Czech	Foreign
YES	82	41	85	22	39	128	140	68
NO	45	34	54	11	20	90	88	45
Total in column	127	75	139	33	59	218	228	113

Source: Application and own processing.

**Table 8.** Impact of application of age management on knowledge transfer.

Age Management on Knowledge Transfer	Size			Sector			Ownership	
	Small	Middle	Large	Primarily	Secondary	Tertiary	Czech	Foreign
YES	54	29	69	9	27	99	107	45
NO	81	48	71	24	33	127	129	71
Total in column	135	77	140	33	60	226	236	116

Source: Application and own processing.

Table 4 presents result that show that there are no significant dependencies of age management application and neither size, sector nor ownership of an organisation. It is possible to state that age management is applied in organisations of all sectors, sizes and ownership. All of them see the effects of the age management application. There is no specific sector or size of organisation which would apply the concept more or less than others. This also shows the widespread importance of age management in all sectors, sizes and ownerships. The details are in Table 5 below. It is possible to see that all types of organisations have a significant number of members applying age management.

Table 5 also specifies concrete numbers of organisations applying age management. It is possible to see that there is a higher percentage of the age management application in large organisations (57%) compared to small and medium (in both cases one-third of small and medium organisations apply age management). The highest percentage of age management application within sectors is in the

tertiary sector (42%), but, on the other hand, both primary and secondary sectors show one-third of organisations applying age management. Thus, there are no significant differences between sectors. As mentioned above, all organisations across sectors, sizes and ownerships started to realise the necessity of age management in the current environment which is characterised by the ageing of the population.

When examining the results in different ownerships of organisations, we may see that most of the foreign-owned organisations are applying age management (62%) compared to 32% of Czech organisations. Further testing also showed that there is no significant relationship between age management application and career planning in none of the tested types of organisations. There is a relationship between the size of organisation and impact on career planning ( $p$ -value = 0.283) and between sector ( $p$ -value = 0.710) but none of them is significant. Together, 180 (14.2%) organisations declared that age management has a significant impact on career planning. Details can be seen in Table 6. It is possible to see there is always 50% or more organisations declaring impact of age management application on career planning. This can be seen again in all sizes of organisations, all sectors and ownerships.

Similar results were obtained when testing the impact of age management on gaining competitive advantage. Tests found relations between the size of the organisation ( $p$ -value = 0.378), sector ( $p$ -value = 0.456) and ownership ( $p$ -value = 0.827), but none of them is significant. Out of 341 organisations applying talent management, 208 (16.4%) declared relation between the application of age management and a gain in competitive advantage. Table 7 shows results per size, sector and ownership of searched organisations.

Table 7 shows that even a higher percentage of organisations who apply age management also see an impact on the competitiveness of the organisation and gain competitive advantage. In most of the columns of Table 7, it is possible to see that over 60% of organisations declared impact on competitiveness. Again, this is broadly spread in all sectors, all organisational sizes and also ownerships.

Furthermore, the impact of age management application on knowledge transfer was investigated. Results are similar as in the case of competitiveness. Again, 208 (16.4%) of 341 organisations applying age management declares impact of age management on knowledge transfer. Weak correlations were found in the size of the organisation (0.179) and ownership (0.244), middle correlation in the case of the sector (0.456), but again,  $p$ -value could not be calculated. As can be seen in Table 8, the impact of age management application on knowledge transfer is prevalent in all types of organisations across sizes, sectors and ownerships. This time, it is possible to observe the different divisions of organisations reporting impact on knowledge transfer. Impact on knowledge transfer declares a lower percentage of organisations. The part of organisations seeing this impact is between one third to maximum half of organisations applying age management. The purpose is to retain key workers; the transfer of knowledge is only a secondary effect.

Another factor examined is at the relationship between age management and employer branding, as this is an important area regarding employee retention and development. In total, 296 of 341 organisations declared impact of age management on employer branding. As we can see in the results above, again, all organisations in all sectors see this benefit. In this case, the percentage is quite high and reaches almost 90% of the surveyed organisations. Thus, age management has a direct effect on employer branding of surveyed organisations.

To further analyse the results, factor analysis was used. As the correlation matrix shows the adequate level of relations and their significance, it was decided to conduct multidimensional analysis. The approach is more in detail described in the Methods section. The factor analysis was calculated from outputs of questions with several possible answers (scale).

Results show a total of three significant factors; one of the identified factors only slightly exceed the value of 1.0, for this reason it was eliminated from further calculations and interpretation (Sutin test was used to calculate final number of factors). In total, therefore, two significant factors were identified that meet the criteria according to this methodology. To create calculations of factor analysis, the final

Table was adjusted to leave out variables that were repeated in the factors and did not form a unique factor composition (cross-loadings were eliminated). Furthermore, variables that hardly reached the required minimum values to be included in factors were omitted. The final identified factors and their description are given below (Table 9). Significant attributes for each factor are highlighted in bold. In total, half of the variance was explained.

**Table 9.** Factor analysis of age management benefits.

Variable	Factor 1	Factor 2
Motivation and performance upgrades within current employees	<b>0.745</b>	0.199
Improvement of org. climate	<b>0.792</b>	0.059
Improvement of org. culture	<b>0.715</b>	0.179
Improvement of org. prestige	<b>0.539</b>	0.249
Setting of org. culture	0.194	<b>0.778</b>
Improvement in crisis management	0.205	<b>0.557</b>
<b>Total of variance</b>	<b>34.036</b>	<b>11.077</b>
<b>Name of the factor</b>	<b>Internal branding</b>	<b>Crisis avoidance</b>

Source: Application and own processing.

The first factor is formed by four variables that are typical for the area of the internal branding of employer and strategic direction of human resource practices towards better organisational culture, climate and employee motivation and performance. These are the main benefits and impact of age management application grouped by 34% of surveyed organisations.

Variables grouped by Factor 1 are focused on internal strategic management of employer brand through the improvement of concepts of personnel service development together with the growth of organisation's prestige. This factor may be called "Strategic internal employer branding". Based on the results, the data were re-evaluated and organisations with the same responses were found in the data file and calculated. It can be stated that 34% of the sample examined, have a perfect concept of internal strategic management for employee performance improvement through the improvement of culture and climate using principles of age management.

As mentioned in the literature review, the relationship between age management and strategic management has a strong and positive impact resulting in internal improvements which are related to the application of age management. The result and effect of age management application are internal improvements in organisational culture, climate, employee motivation and performance. The factor analysis found attributes of age management which are used and impact employer branding.

The second approach of studied organisations to age management is the opposite. Organisations grouped by factor 2 are not focused on strategic improvements, but rather on crisis avoidance. Those organisations use age management to improve crisis in their organisation and trying to set up organisation culture, which was either not defined or needs a redesign.

This approach is rather reactive than proactive. Organisations grouped in the factor were probably not aware of the necessity of age management until they got into a crisis caused by the lack of employees and unsuitable organisational culture and personnel practices. In total, 11% of the studied sample can be described as using age management and its benefits as a reaction to a crisis in the organisation. On the other hand, this result shows the power of age management to improve problematic situations in organisations and shows clear benefits of its application. Therefore, it is recommended that all organisations apply age management to avoid a crisis or to use other benefits, which were described in Factor 1.

To identify the pillars of age management, it was necessary to conduct another factor analysis. The methods of analysis were the same as described above. Again, the factor analysis was calculated from outputs of questions with several possible answers (scale). In this case, analysis again found two significant factors. The description of factors is below (Table 10). Significant variables for each factor



are highlighted in bold. To find groups of organisations, the data were re-evaluated and organisations with the same responses were found in the data file and calculated.

**Table 10.** Factor analysis of age management pillars.

Variable	Factor 1	Factor 2
Knowledge of age problematics	0.099	<b>0.656</b>
Open approach towards ageing	<b>0.631</b>	0.261
Existence of plans and options of development	−0.015	<b>0.776</b>
Good skill level of motivation and cooperation	<b>0.586</b>	0.122
Good organisation of work and work environment	<b>0.698</b>	0.078
Satisfying work life and work climate	<b>0.774</b>	0.028
<b>Total % variance</b>	<b>33.737</b>	<b>11.980</b>
<b>Name of the factor</b>	<b>Practical application</b>	<b>Systematic planning</b>

Source: Application and own processing.

The first factor shows practical approaches and skills used in an organisation to implement age management practices. There is no in-depth knowledge of the age problematic, but organisations which work based on their open approach towards ageing, have a good level of employee motivation and cooperation, good organisation of work and work conditions, and satisfying work-life and organisational climate. This factor can be therefore named Practical Application of age management practices.

The second factor is the opposite. Organisations grouped in this factor have in-depth knowledge of age problematics and based on this, have plans and options for future development. Their application of age management is based on systematic planning and analysis. Therefore, the name of the second factor is Systematic Planning.

It is possible to assess that there are two possible approaches to age management application. Both are possible and used in practice by real surveyed organisations. To respect the age of employees is important as the source of the creation of competitive advantage. People and their knowledge are an important organisational resource that has to be nurtured by organisational management which is confirmed by [72,73]. The employment of experienced age 50+ employees and their collaboration with younger talented people should be viewed as a strategic human resource management action as it is as an opportunity to use human potential to improve organisation's performance effectively. By effectively leveraging the potential of employees of all ages, an organisation has a better chance of eliminating threats from the external environment. Emphasis must be placed on constant learning of both young and talented employees who acquire and deepen their knowledge and experience, and the willingness to learn new things from age 50+ workers.

## 5. Discussion

Results of longitudinal study conducted in Czech organisations (i.e., [74]) have shown that benefits of age management lie in the form of employer brand building, which leads to gaining a competitive advantage. The benefits of age management in improving organisational culture and improving the organisation's prestige also depend on the size of the organisation. These organisational factors are most influenced, according to research results, in small and large organisations.

The results presented in this paper, show the impact of applying age management on the promotion of knowledge sharing between generations of employees, as confirmed by researches by [2,4,73,74]. In his study [4], focused on testing the relationship of older workers and their inclination to development and education, their perception of opportunities for their development in relation to their position, their attitudes to commitments and responsibilities within the organisation and their intention to stay in the organisation. The results also demonstrate the impact of age management on career planning of all age groups of employees. The results of [4] presented that elderly workers'

tendency to develop and learn within the organisation is dependent on the organisation's climate and willingness of these workers.

Authors [2] points out that the balance between the requirements for older workers and the concept of human resources is important for the sustainability of these workers in organisations. This was also confirmed by the research that is presented in this article; the need for sustainability of workers is shaped by the internal branding of the employer. The main factors influencing retention of workers in organisations are, above all, higher self-esteem, motivation and social status. Age management concepts should address these factors. Authors [75] examined in their study main changes associated with the aging of workers, which have an impact on their educational framework, educational objectives and structure. An examination of the interdependence of the relationship between access to education, educational objectives, educational structure and increasing age of workers confirmed that older workers have a stronger and more positive attitude towards their development [75]. The study of [76] focuses on older workers' access to workload and their work situation across different sectors. The aim of the research was primarily to describe the perception and attitudes of organisations to prolong working life. The results confirmed the overall need to develop strategies to strengthen sustainable age management in the organisational structure. Furthermore, research [76] identified three areas that shed light on the approach and perception of the integration of age management into the organisation's structure: modern policies, approaches and practices in the working environment, social participation and experienced management and mentoring. These areas form the basis of good approach to the integrity of age management in the organisation's strategy [76].

Author [77] identified the key role of managers in age management as a crucial component in the sustainability of older workers. This is consistent with research conducted (e.g., identified factors Practical Application and Systematic Planning). Social interest allows older workers to extend their working lives. In recent years, this is mainly due to demographic change and it is therefore necessary to work with this and integrate the concept of age management into the organisations' strategies. The key role of managers in extending working life is based on [77], in particular by being in charge of controlling the organisation as a whole, thereby controlling the working environment itself and thus creating potential opportunities for older workers to extend their working lives. However, author's [77] research results show that only 5% of the 906 managers surveyed said that the organisational structure is aimed at extending sustainable working conditions for older workers. The results also show that managers are only interested in workers who have specific skills that benefit their organisation, not older workers in general [77].

The factors influencing workers' behaviour contribute to an understanding of the current concept of age management and to direct the orientation on age management, which should strengthen the participation of older workers. This may also be related to a process of adequate retraining and further education using innovative technologies. Adequate requalification of retraining is a tool to suitably supplement the requirements for workers, making them more desirable for managers. Age management can play its role both for individuals, organisations and the state as stakeholders, as confirmed by [78,79]. In accordance with the results of [73,74,76–78,80] it is necessary to transform both system of education and retraining and, at the same time, to transform the approach of age management to age 50+ employees at the organisation level. Author [81] states that care for sustainability of older workers, which was stressed by [77], is needed because unrealised, deliberate and emerging strategies according to [81,82] are performed by age managements such.

## 6. Conclusions

Based on the presented results, it can be surmised that age management leads to the possibility of effective and long-term utilisation of human resources in all organisations. Ageing population is not considered to be the primary problem in current practice yet, but can create a problematic situation with regard to current demographic development. The results have shown that age management is an area with great prospects for the development of organisations of all sizes and types of businesses

in all sectors, through the application of age management which ultimately leads to a competitive advantage. Age management demonstrably influences strategic development of the whole organisation in the following areas: retention of key employees, recruiting talent (from external environment), improvement of motivation and performance of existing employees, improvement of organisational climate, improvement of organisational culture, improvement of organisation prestige, gaining a competitive advantage, improving crisis management, and improving organisational performance. A practical recommendation for organisations is the application of age management with an emphasis on organisational development and ensuring knowledge continuity. Organisations can use age management to increase the level of their internal employer branding, retention of employees, continuous education of key employees, and to maintain knowledge within an organisation. Likewise, age management is suitable for dealing with human resource crises, staff shortages, knowledge continuity problems, and stabilising the internal environment of an organisation, organisational culture and climate.

All types of organisations, regardless of their size, business orientation, and whether they are local or international, can derive benefits of age management. While the approach to age management may vary across organisations depending on whether it is the employer's internal branding or response to the crisis, age management can be a strategic initiative to growth. Organisations either use best practices to implement age management, or it is a carefully planned process in advance. Follow-up research can focus on the use of age management in crisis management or for employer branding.

In terms of limitations of this study, the first one is subjectivity in answering questionnaires by HR representatives of selected organisations. The second limitation is the process of interpretation of results by researchers, especially during the explanation of multidimensional methods. Those are subjective, but due to expert knowledge of age management by the researchers, the outputs are based on real cases and practical realisation of age management in searched organisations and thus should be reliable.

The contribution of this article lies in the identification and evaluation of the key factors of age management application, key approaches to implementation, and benefits of age management in organisations. Furthermore, the practical contribution lies in the identification and evaluation of key aspects of internal marketing and effective human resource management. Those hierarchical constructs make employer branding linked to age management operable and opens the possibility to use identified age management practices to avoid or manage a crisis in organisations. Moreover, the contribution lies in presenting concrete results from real organisations who have successfully implemented age management as a tool balancing unrealised, emergent and deliberate strategies.

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