

## Level of investments in human capital in SMEs as a means of further development and increased competitiveness

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### Abstract

This paper analyses the impact of company size on the application of human resources (HR) investments. Data were collected through a questionnaire distributed to 610 SMEs in the Czech Republic. Properly completed questionnaires were obtained from 581 enterprises. The data were evaluated using the Chi-square test of independence, Kolmogorov-Smirnov normality test, Kruskal-Wallis test, and analysis of variance. Research questions were divided into four groups. The first group examined the application of HR investments as a reward, and the second group as a tool for increasing the interest in employment with the company. Another group focused on human capital management (HCM) and its impact on corporate financial performance. The last group dealt with HCM to improve the competitive advantage and the market position of the company. The results show that company size has a significant impact on the application of HC investments. In all groups, large enterprises (150+ employees) make investments to a greater extent than smaller companies. As for sector, the highest rating was recorded for companies operating in logistics and transport. The overall evaluation shows that large companies use the items more often, and no significant differences were recorded between different sectors. The findings may help large enterprises to realize that investment in human capital is long-term, increases competitiveness, and generates indirect returns. Small enterprises can also make investments in human capital, although to a limited extent, and it is not advisable to totally avoid such investments. The limitations are in the selected research method, the number of questions and respondents.

**Keywords:** *human resource management, human resource investment, human capital, company size, SME, market, competitive market*

**JEL Classification:** O15, L25, J21, D25, E24

Article history: Received: June 2023; Accepted: March 2024; Published: March 2024

### 1 INTRODUCTION

Investments in human resources (HR) have long been perceived as costs. Cost inflation used to be a reigning economic theory. Proponents of this theory believed that workers and their high wages are to blame for economic stagnation and growing production costs. In modern economic theory, investments in human capital (HC) are not seen as costs but as investments. A qualified and competent workforce ensures higher productivity and efficiency. The main factors of competitiveness in the current market are innovations, and people are the innovators. The usage of innovative platforms also provides competitive advantages, especially for service firms (Rozsa et al., 2021). Similarly, competitiveness also stimulates innovation, which enables the creation of new products and services (Civelek et al., 2021) and increases firm performance (Civelek et al., 2023).

Educated and qualified employees represent a strategic advantage for the company. Furthermore, education influences the perception of business risk (Dvorsky et al., 2021). For

instance, more educated workers less intensively perceive export risk and thus can implement more aggressive export strategies (Ključnikov et al., 2022a). Moreover, education positively affects innovativeness (Ključnikov et al., 2021). Education increases qualification and thus also expertise and leads to the selection and specialization of workers. Therefore, investments in HR should be considered in national budgets (Obradovic & Arsic, 2013). Any economic entity aims to have an optimal reward management system and to achieve maximum returns through optimal investments in employees, increasing employee motivation and knowledge, and developing their skills and competencies. To achieve the goal of maximum corporate performance, it is necessary to systematically approach HR management within a specific economic entity and to create the fairest possible system of both material and non-material rewards and penalties using the methods of reward management. This will bring about a positive working environment in the enterprise, the employees of which will be able to adapt to changes, communicate with each other, and cooperate at a high level quickly and easily.

This paper analyses the impact of company size by number of employees and sector on making investments in HC and the use of HR.

1. Is company size by the number of employees directly proportional to the actual application of HC investment and of using HR management by enterprises?
2. Is the business sector of the company directly proportional to the actual application of HC investment and the use of HR management by enterprises?

## 2 THEORETICAL BACKGROUND

Employee motivation is currently the main key to the success of the whole organization (Kovařikova et al., 2021). HC is the main factor supporting the creative economy, and the strengthening of HC depends on the level of education and scientific progress in a given country. HC is also a key pillar in the realization of the goals of a smart company, smart city, and smart region, as a platform for the competition of public and non-public entities (Gavurová et al., 2022). Empirical evidence shows that investments in HC contribute to the formation of the creative economy, the improvement of countries' competitiveness, and ensuring the relevant degree of their socio-economic development (Londar et al., 2021). HC shapes patterns of interdependence between financial development, fiscal instruments, and environmental degradation in advanced and converging E.U. countries (Zioło et al., 2020). HR is a key driver in a country's research and development (Tuan & Dung, 2020) and is linearly proportional to the economic growth of an enterprise, country, and region (Yang, 2017). HC is also the main driver of corporate social responsibility activities (Metzker & Zvarikova, 2021), sustainable growth and the reduction of poverty. Environmental awareness of employees also improves environmental performance of businesses (Yayla et al., 2021). Countries with high incomes and prosperous companies are more able to finance the development of HC. Higher investments in HC in countries with higher incomes are associated with higher earnings of citizens, higher incomes for countries, and stronger cohesion in companies (Olievska & Romanov, 2021). Investments in training, and the level of employee knowledge and skills are positively related to the performance of companies. Moreover, educational courses and workshops increase awareness of workers regarding operations of businesses (Ključnikov et al., 2022b). However, according to Rahman and Akhter (2021), the level of employee education does not have an impact on corporate performance. There is a significant one-way correlation between corporate performance and an increased HR index. This confirms that, e.g., in the Serbian economy, which experienced a global decline during the transition, some business sectors and mainly companies with a high level of investments in improving their HR index experience an above-average and sustainable growth. Technological development has made manual labor, material

capital, as well as natural and financial resources gradually lose on their importance. In a society where the economy is based on knowledge as a backbone of comparative advantage, a key factor of the production is a group of intangible factors. They include knowledge, skills and work culture, which are gaining greater market value over time (Zubovic et al., 2015). Employee education is not only important for the continuous growth of HR but also ensures sustainable HR management in companies. It is important to understand corporate behaviour related to employee training from the perspective of both one and more enterprises (Zhang et al., 2019).

At the end of 2008, the global economic crisis began, threatening countries and enterprises, and indeed most areas of human life. One of the most significantly affected areas was HR management. Although HC (employees) is considered the most important asset of any enterprise and the major source of its competitiveness, employees tended to become the most common object of cost cutting. Enterprises started downsizing, reducing wages and benefits, and limiting the length and scope of employee training (Elexova, 2011). A similar situation was noticed during the COVID-19 pandemic, when companies were struggling for survival. The fact that HR is the main factor ensuring the efficiency of a company was even more confirmed (Mufrainf et al., 2021; Belas et al., 2022). The onset of the pandemic and the subsequent introduction of restrictive measures brought about many risks to SMEs, as well as many opportunities. Although the crisis had been long anticipated by many economists, and as early as 2019 the first signs of a recession were recorded in developed economies, few had expected it to be accelerated and deepened by the global pandemic (Zarska & Sochulakova, 2022).

Enterprises quickly realised that investments in HR increase profitability through better labour productivity, while productivity increases investments in HR, thus creating a recurring cycle beneficial mainly for large and stable enterprises throughout their existence. Due to smaller budgets and simpler organizational structure, the application of this investment is significantly reduced in small enterprises, and their investments in HR are less common and smaller. However, even small enterprises are able to adjust their investment program to their needs and capabilities (Roca-Puig et al., 2019). It is a closed circuit that needs to be constantly reiterated and innovated. HR is also the main source of knowledge in companies and is considered an essential, or even the most important, resource. Therefore, HR management and development are crucial for increasing the value of the company. This paper analyses the impact of investments in education on the overall value of intangible assets (Garcia-Zambrano et al., 2013). Managers should realize that investments in HR are long-term, but this should not discourage them, for in the long run, most of them generate much more return (Vithana et al., 2021). The level of investment in HC may also affect the firm's obtaining of patents on original processes. It has been found that HR management contributes to an increase in the number of granted patents through sustainable investment in innovation (Peng et al., 2020). Employee investment significantly contributes to the growth of both employees and organizations. The application of the right criteria for selecting employees to participate in an HC investment initiative (HCI) is crucial (Motshwane & van Niekerk, 2023). HC and structural capital positively affect the financial performance of companies (Skare et al., 2023).

Highly competitive and complex markets require dynamics to maintain outstanding performance. One of the important factors that may bring about a competitive advantage is definitely the investment in corporate HR (Trujillo-Gallego, 2022). HR management focuses on the management of human potential within a company in order to achieve the corporate goals as well as the goals of the employees. An important part of this process is training and development in the form of activities aimed at improving employee skills, abilities, and

competencies, so that they could be more successful in their job but also at providing a basis for further development of the organization as a whole (Katic et al., 2020). Business experience has a positive effect on HR management and future development aimed at increasing the share of investments. Basically, the paramount importance of HR and HR management in the international business environment is confirmed; it has been found that investments in HR are of key importance for business success. Moreover, in times driven by influences specific to the knowledge society and knowledge economy in which intellectual capital will be considered one of the most important intangible assets of entities worldwide, measuring HR investments turns out to be essential for the success of businesses and an essential step in maintaining sustainability and competitiveness (Sebestova & Popescu, 2022). Although managers often do not use terminology specific to the enterprise and general skills, they recognize that employee investments in their skills are more or less relevant for a given company. For example, investments in specific relationships within a company or learning firm-specific proprietary software would be considered firm-specific investments. While such skills might appear to be relevant only to the specific company in which they were invested, these investments may send valuable signals to the competitors that such employees are willing and able to make similar investments elsewhere. Therefore, managers should inquire whether a potential employee has previously invested in a specific company so that they could determine whether such a person is likely to make such investments in their future employment (Morris et al., 2017).

Companies operating in the field of e-business are an example of sustainable business. These companies see people as the most valuable asset. Human capital management (HCM) is a modern concept of people management based on the business strategy. Slovak enterprises use the HCM concept only to a low extent. Although they consider investments in education or professional training to be the main form of investment in HC, they do not evaluate the effectiveness of these investments in practice. The analysis of studies by foreign authors shows that companies operating in e-business consider IT-related training to be important for their performance, competitiveness, and sustainability (Kucharcikova et al., 2018). Qualified workforce, R&D, and knowledge-based inter-organisational networks are important sources of innovations. The relationship between IT and innovation outcomes has not yet been sufficiently clarified, as it is unclear whether investments in IT act as a substitute or complement to other resources to generate innovation capabilities and how such relationships play out over time. Orozco et al. (2022) confirm that investments in IT substitute rather than complement a qualified workforce in order to improve innovation performance over time, and its interaction with networks does not significantly affect innovation performance.

Internationalization provides SMEs with many strategic advantages, but it is not easy to achieve. Unlike many studies on the issue of the internalization of SMEs with a focus on the role of entrepreneurs in the internalization processes, this study is based on the assumption that investments in HC in SMEs pay off if carefully calibrated with a selected internationalization strategy. It has been found that corporate investments in HC are essential for labour productivity and internationalization in fast internationalizers but not in companies that internationalize more slowly (Onkelinx et al., 2016). To some extent, IT competencies determine corporate business performance but also play an important role in improving HCM capabilities. Moreover, HRM capability significantly affects corporate performance. Managers thus should not allocate all resources to IT investments. To be able to achieve better business performance, these technologies should be used to support all business processes, including the activities within HR management (Turulja & Bajgorić, 2016). Getting to the forefront of the processes requires investments in research and development. The institutions for HR training and development of science and technology are of great importance for their professional staff and

society in general. They have higher-level skills that translate into the development of technical skills that support the growth and modernization of companies. Kuzey et al. (2021) identified the partial mediating role of innovation capital in the relationship between HC investments and corporate performance measured by accounting return on assets.

In many developed countries, demographic and economic conditions have created a situation when traditional approaches to HR management do not solve the problem of attracting and retaining a highly qualified workforce (Aleksandrovna et al., 2017). Countries with rich natural resources such as fuels and minerals often lag in the field of HR development. Resource dependence reduces government spending on public goods that increase HC, including investments in employee training. Local economic structure and reduced demand for labour, the shift of government responsibility to mining undertakings, and the myopia of local citizens and officials discourage local governments in regions rich in resources from investments in HC (Zhan et al., 2015).

However, investments in HR can be also viewed from other perspectives. Less than 20 % of multinational companies operating in Australia invest more than 4 % of their annual pay bill in employee training and growth, and nearly a quarter of companies invest less than 1 % in employee training and development (Sablok et al., 2017). Yoo et al. (2021) state that no research has clearly confirmed the existence of a relationship between investments in training and development (TD) and the financial performance of companies. Literature on HC suggests that investments in TD do not necessarily influence financial performance immediately but can create effects that will be visible over time. However, most existing cross-sectional research analyses the impact of investments in TD on performance and does not pay attention to the long-term effects of TD investments (Kwon, 2019). Despite the importance of achieving a competitive advantage in the field of HR in the restaurant industry, restaurant companies are often hesitant to make significant investments in HCM practices due to the uncertainty of the outcome, operational challenges, and limited financial resources (Park et al., 2017). The relationship between investments and HR productivity is stronger in organizations with low levels of high-performance work systems (Subramony et al., 2020). However, positive views on HR investments still prevail, e.g., Veltri and Silvestri (2018) confirmed the assumed correlation between investments in HR and the financial health of companies. Investments in HC have a positive effect on corporate earnings, which is stronger than in the case of programs that are not related to HC investments (Biedka et al., 2021). Studies on human behaviour based on motivation show that the more a company invests in employee satisfaction, the more people work (Massi et al., 2010). The performance of HR is positively correlated with the mechanisms of corporate governance supporting and improving strategic policies of HR management (Lajili et al., 2020).

HR management currently appears to be a vital aspect of many organizations, including banking institutions. These days, HR management has a unique and timely opportunity to increase the productivity of companies (Ferreira et al., 2018; Skýpalova et al., 2023). Important factors of business success and the development of a specific area or business entities include abundance, quality, and a combination of factors of corporate human resources development (Bozovic & Duraskovic, 2010). Regarding statistical methods used for country data or for data with a specific structure, it is recommended to use the methods that take this structure into account. The absence of these methods could lead to misleading conclusions (Stefko et al., 2021).

### 3 RESEARCH OBJECTIVE, METHODOLOGY AND DATA



Data used for statistical evaluation were obtained through a questionnaire survey conducted among SMEs in the Czech Republic. Secondary data were obtained from the research activities within Industry 4.0 implemented in cooperation with the Slovak Academic Association for Personnel Management (SAAPM). In total, data from about 610 enterprises were collected in 2020. Each question answered by enterprises was considered from two aspects: the actual application in a specific company, and the level of importance of this aspect for a specific company.

After analysing the data obtained from all 610 addressed companies, it was found that 3 enterprises did not mention the sector they operate in, while 26 enterprises mentioned more than one sector. These respondents were excluded from the statistical evaluation. Therefore, data from 581 companies were subject to evaluation.

To verify the relationship between company size, sector and the following items in the questionnaire,

- Investments in HC are considered a form of reward;
- Investments in HC are considered a tool to increase the interest in employment with a given company;
- HCM contributes to improving the financial situation of companies;
- HCM contributes to improving the position of the company in the market,

the Pearson chi-square test of independence was used (Budíková et al., 2010). This was possible since the pairs of variables, the relationships of which are being analysed, are categorical and meet the conditions for the performance of the test. This means that the expected frequencies are higher than 5 in 80 % and not below 1 in the remaining 20 %.

Test criterion of Pearson chi-square test of independence:

$$\chi^2 = \sum_{j=1}^r \sum_{k=1}^s \frac{(n_{jk} - \frac{n_{j.}n_{.k}}{n})^2}{\frac{n_{j.}n_{.k}}{n}} \approx \chi^2((r-1)(s-1))$$

where  $n_{jk}$  are observed frequencies and  $\frac{n_{j.}n_{.k}}{n}$  are expected frequencies.

$r$ =the number of rows in the contingency table,  $s$ =number of columns in contingency table.

To verify the relationship between sector and use of HC, the Kruskal-Wallis test will be used. The assumption of normal distribution will be verified using the Kolmogorov-Smirnov test (Budíková et al., 2010).

Test criterion of Kolmogorov-Smirnov test:

$$D = \max_{-\infty < x < \infty} |F_1(x) - F_2(x)|$$

Tabulated critical value is  $D_{n,m}(\alpha)$ .

$F_1(x)$  is a one-sample distribution function and  $F_2(x)$  is the two-sample distribution function.

Test criterion for Kruskal-Wallis test:

$$Q = \frac{12}{n(n+1)} \sum_{j=1}^r \frac{T_j^2}{n_j} - 3(n+1) \approx \chi^2(r-1)$$

$T_j$ =sum of the order of values of the  $j$ -th sample from the total pooled sample

To verify the impact of company size on the application of HC, an analysis of variance will be used (ANOVA).

Test criterion of ANOVA:

$$F = \frac{S_A/(r-1)}{S_E/(n-r)} \approx F_{1-\alpha}(r-1, n-r)$$

where  $S_A$  = group sum of squares,  $S_E$ =residual sum of squares,  $r$ =number of samples,  $n$ =overall number of measurements.

All tests are performed at the 5% significance level  $\alpha$ .

The data were evaluated using MS Excel and the software SPSS Statistics 26.

#### 4 RESULTS AND DISCUSSION

Company size by the number of employees is considered a categorical variable. The relationship between company size and the actual level of investments in HC and HR management is tested using the chi-square test of independence. Good approximation conditions need to be met for testing. These conditions have been verified using tables of expected frequencies.

The first area examined was whether enterprises consider investments in HC to be a form of reward. It has been found that the actual application of this statement is most common in the case of companies with more than 150 employees. The highest application of this statement was reported by about 12 % of large companies; the second highest level of application by about 33 % and the medium level by about 30 % of large companies. Based on these results, it can be stated that the highest and the second highest application of this statement decreases with the decreasing size of the company. This conclusion is confirmed also in the case of small companies with up to 9 employees, which most often evaluated the actual application of this statement as the lowest (37.3 %) or the second lowest (25.8 %). Even in this case, it was thus confirmed that the actual application of investment in HC decreases with the decreasing size of the company.

The second area examined whether investments in HC are currently considered a tool to increase interest in employment with a given company. The results show that the actual application of this statement is highest in companies with 150 or more employees. The highest rating (5) was used by 19 % of large companies addressed and 4 by 40 % of companies in the same size category. Based on these results, it can be stated that the actual application of the statement that companies consider investment in HC to be a tool to increase interest in employment with a given company decreases with the decreasing size of companies. The smallest companies with up to 9 employees reported the lowest level of application in 37.3 % of enterprises. The second lowest level of application was most often reported by companies with 10 to 49 employees (18.1 %). The conclusion was thus confirmed even in this case.

The third area states that the application of HCM helps to improve the financial situation of companies. The actual application of this statement was again highest in the case of companies with more than 150 employees, where the highest rating was used by 13.8 % of companies, while the second highest rating (4) by 34.4 % of large companies. The results thus show that the actual application of this statement increases with the growing size of companies. This is also confirmed by the fact that the lowest rating was used by the smallest companies (in 42.2 % of cases) and the second lowest rating by companies with 10 to 49 employees (25.7 %).

According to the last area, the application of HCM helps to improve the position of the company in the market and achieve a better competitive advantage. Even in this case, the highest rating was mostly used by the largest companies with more than 150 employees in 18.5 %, while the second highest rating (4) was used by 36.4 % of the largest companies. This indicates that the application of HCM as a tool to improve the position of the company in the market and gain better competitive advantage increases with the growing size of companies. The lowest and second lowest ratings were most used by small enterprises with up to 9 employees (40 % and 20.9 %).

Tab. 1 –Results of Pearson Chi-square test. Source: own research

Item	Test criterion	Degrees of freedom	p-value	Cramer's V
Investments in HC are considered a form of reward	56.261	12	<0.001	0.175
Investments in HC are also considered a tool to increase the interest in employment with the company	76.622	12	<0.001	0.205
Application of HCM contributes to improving the financial situation of companies	83.873	12	<0.001	0.215
Application of HCM contributes to improve the position of the company in the market	97.372	12	<0.001	0.231

Table 1 shows that the statistically significant impact of company size ( $p < 0.05$ ) on the level of investment in HC and the application of HR management was confirmed for all four statements. It can thus be concluded that the application of the above concepts differs depending on the company size and this difference is statistically significant. This indicates that large enterprises apply these concepts significantly more often than smaller enterprises.

The sector the companies operate in is considered a categorical variable. The relationship between the sector of the company and the actual level of investments in HC and HR management is tested using the chi-square test of independence. Good approximation conditions must be met for testing. The compliance with the conditions was verified using the tables of expected frequencies.

It was found that investment in HC is most often considered a form of reward in companies operating in the sector of transport and logistics. In these companies, rating 5 was used in 14.3 % of respondents, and rating 4 in 23.8 % of respondents. The rating most often selected by companies operating in transport and logistics was 2 (in 30.2 %). Companies operating in



manufacturing mostly rated this item with a value of 4 (28.2 %), companies operating in the services sector 3 (25.6 %).

Furthermore, it was found that the actual application of investment in HC as a tool to increase interest in employment with a company is most common in the companies operating in transport and logistics. Rating 5 was selected by these companies in 22.2 % of cases. However, the most frequent rating selected by these companies was 4 (28.6 %). Companies operating in the sector of services and manufacturing mostly selected rating 4 (36.4 % of companies operating in manufacturing and 32.1 % in services). About 25 % of companies in all sectors selected rating 3.

Other results indicate that the actual application of HR management as a tool to improve the financial situation of companies is most common in companies operating in transport, logistics, and services. These companies selected rating 5 in about 10 % of cases. However, the most common rating selected by companies operating in transport and logistics was 4 (33.3 %). Companies operating in manufacturing and services rated this item with a value of 3 (31.3 % for companies in manufacturing and 32.9 % for companies in services).

The results also show that the actual application of HR management as a tool to improve the position of a company in the market is most common in companies operating in transport and logistics, which selected rating 5 in 14.3 % of cases. However, the most common rating selected by these companies was 4 (31.7 %). Companies operating in the services and manufacturing sector mostly selected rating 3 (32.5 % of companies operating in manufacturing and 28.2 % of companies operating in services).

Tab. 2 – Results of Pearson Chi-square test. Source: own research

Item	Test criterion	Degrees of freedom	p-value
Investment in HC is considered a form of a reward	16.814	12	0.157
Investment in HC is considered a tool to increase interest in employment with the company	12.681	12	0.393
HCM is a tool to improve financial situation of the company	10.679	12	0.557
HCM is a tool to improve the position of the company in the market	10.922	12	0.536

Table 2 shows that no statistically significant impact of the sector in which companies operate was confirmed ( $p > 0.05$ ). This means that the application of the previously mentioned concepts does not differ significantly across various sectors and is at a similar level.

Furthermore, it was investigated whether company size and the sector in which the companies operate have an influence on the items determining the application of HCM as a whole. The total application of HCM was determined as the arithmetic mean of these items. The internal consistency of this set of items measured by Cronbach’s alpha (Hendl, 2012) is sufficient, with a value of 0.824. A sufficient value of Cronbach’s alpha is considered to be 0.7.

Prior to selecting a suitable test, the normal distribution of the score of the application of HCM in groups by company size and sector was tested by Kolmogorov-Smirnov normality test.

Tab. 3 Results of Kolmogorov-Smirnov test - company size Source: own research

Tests of Normality			
Company size	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	p-value
1 - 9	0.091	110	0.025
10 - 49	0.052	145	0.200
50 - 149	0.060	159	0.200
150+	0.078	196	0.006

Table 3 shows the normal distribution test for company size.

Tab. 4 Results of Kolmogorov-Smirnov test – sector Source: own research

Tests of Normality			
Sector	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	p-value
Manufacturing	0,071	210	0,013
Services	0,057	238	0,060
Transport and logistics	0,102	63	0,170
Others	0,059	88	0,200

Table 4 shows the test of normal distribution of data by sector.

In groups by company size, the application of HCM meets the criterion of normal distribution in all groups ( $p > 0.05$ ). To verify the influence of company size on the application of HCM, parametric test will be used – analysis of variance (ANOVA). The prerequisite of homogeneity of variance tested by Levene’s test was met ( $p > 0.05$ ).

The performed analysis of variance confirmed the statistically significant influence of company size on the application of HCM ( $F = 11.179$ ;  $p < 0.001$ ). Post-hoc tests will be used to identify the differing pairs of companies.

Tab. 5 Post hoc tests Source: own research

Multiple Comparisons		
Dependent Variable: LK		
Scheffe		
Company size	Company size	p-value
1 - 9	10 - 49	0.974
	50 - 149	0.658
	150+	<b>0.000</b>
10 - 49	1 - 9	0.974
	50 - 149	0.869
	150+	<b>0.000</b>
50 - 149	1 - 9	0.658
	10 - 49	0.869
	150+	<b>0.002</b>

150+	1 - 9	<b>0.000</b>
	10 - 49	<b>0.000</b>
	50 - 149	<b>0.002</b>

Table 5 shows that statistically significant differences were confirmed between companies with 150 and more employees and all smaller companies. Companies with more than 150 employees show a significantly higher score in the application of HCM than smaller companies.

In terms of the groups by sector, the criterion of normal distribution is met in all groups except manufacturing ( $p < 0.05$ ). The influence of sector on the level of application of HCM will be verified using the non-parametrical Kruskal-Wallis test.

Tab. 6 Results of Kruskal-Wallis test – sector Source: own research

<b>Independent-Samples Kruskal-Wallis Test Summary</b>	
Total N	599
Test Statistic	6.732
Degree Of Freedom	3
p-value	0.081

It follows from Table 6, the value of the test criterion is 6.732 and the p-value is 0.081, which is a value higher than significance level 0.05. The difference in the application of HCM by sector was thus not confirmed.

The first research question focused on finding out whether company size by the number of employees is directly proportional to the actual application of investments in HC and HCM in companies. The results of the first research question show that large enterprises with more than 150 employees actually apply investments in HC much more than SMEs do. This is mainly due to the fact that large enterprises have a stable background and can afford to use part of their profits for investments with a long payback period, where the return is often indirect and cannot be directly identified. This is in line with the findings of Roca-Puig et al. (2019), who achieved similar results and provide a similar view of the difference between HC investments made by large and small enterprises. The authors also stated that investment in HC is particularly beneficial and relevant for stable large enterprises, often those operating in an international and multinational environment. Obviously, such companies have a stable budget and can thus better create an investment portfolio to improve their HCM. Small enterprises do not have such a wide range of opportunities for investments, and investment in HC is often less of a priority and less common for them. However, even small enterprises can adjust their investments, and owners or managers of such companies should be aware of the fact that if they want their company to grow, this type of investment is also important.

The second research question examined whether the sector in which companies operate has an influence on the actual level of investment in HC and HR management in companies. The second part of results shows that, in the case of dividing companies by sector in which they operate, investment in HC and HR management was most commonly used in companies operating in logistics and transport. This can be due to the fact that there is currently a fierce competition among these companies, and employers thus prefer investments in HC, thereby keeping their employees satisfied and attracting new employees.

The last research question focused on determining the relationship between company size and sector in which the company operates, and the level of application of HC as a whole. Statistically significant differences were confirmed for companies with more than 150 employees and all smaller companies. Companies with more than 150 employees showed a significantly higher rating of the application of HC than companies with fewer employees. No significant differences were confirmed for companies operating in different sectors.

Statistically significant differences were confirmed between enterprises with more than 150 employees and all enterprises with fewer employees. Businesses with more than 150 employees showed a significantly higher ranking in the application of HC than businesses with fewer employees. Differences in the use of HC were not confirmed among companies of different focus according to business sector. By analysing Czech and Hungarian SMEs, Civelek and Krajčák (2022) also confirm the similarities in the export barriers perception of SMEs from various industries, and their explanation involves the experience of workers.

Companies quickly realized that investments in HC increase profitability through improving labour productivity, and company profitability increases investment in HC. HR systems aimed at improving the quality of employees have always been related to effective corporate investments (Lakhani & Ouyang, 2022; Anagnostopoulou & Avgoustaki, 2023). This is a recurring cycle, beneficial mainly for large and stable enterprises (Prystupa, 2017). Obviously, due to the smaller budget and simpler organization structure, the application of this type of investment is smaller and less important in smaller enterprises; however, even small enterprises can adjust their investment portfolio to their needs and capabilities (Bernik & Kermc, 2013; Potgieter & Mokomane, 2020). At the beginning of their research, Yoo et al. (2021) had a different view, claiming that it had not been confirmed by any research that investment in HC improves the corporate financial situation and competitive advantage. However, when continuing their research, they found that the positive impact of investment in HC on the financial performance and competitiveness of a given company is not immediate but gradual and becomes apparent over time. This type of investment has thus a long payback period and its effect is indirect.

## 5 CONCLUSION

The goal of this paper was to determine whether or not the level of investments made by SMEs in HC and HR management is directly proportional to company size by number of employees. In addition, we sought a relationship between this item and the sector in which companies operate.

The first phase of the study consisted of goal formulation, preparation of the questionnaire, and the collection of the necessary data. Next, the introduction to the issue was prepared and the Web of Science and Scopus databases were used to prepare the literature review of findings of other authors dealing with a similar issue. The data were subsequently analysed, and incomplete or unduly completed questionnaires were excluded in order to improve the quality of the evaluation. The data were then evaluated using the Chi-square test of independence and the results were obtained.

The results were divided into four categories. In the first category, the statement that investment in HC is considered a form of reward was recorded mostly in the case of large enterprises with more than 150 employees, while its occurrence was lowest in the case of the smallest enterprises with up to 9 employees. The assumption was thus confirmed. The second category was directly related to the first one, focusing on the extent to which enterprises actually make investments

in HR in order to attract new employees. The results of the analysis were similar to the findings within the first category, confirming that large enterprises with more than 150 employees apply this type of investment to a much greater extent than SMEs. The third and fourth categories examined the level of application of investment in HCM as a tool to improve the financial performance of the company and its competitive advantage. The results of the analyses were again similar and confirmed that large enterprises invest in HCM to a much greater extent compared to smaller enterprises. As for sector in which companies operate, it was found that regardless of the examined item, investment in HR and HCM are most used in companies operating in logistics and transport. Overall, companies with 150 and more employees used the individual items more often compared to smaller companies. No significant differences were recorded in the case of dividing companies by sector.

The findings can be beneficial mainly for large enterprises, which should realize that investment in HC is long-term, with an indirect return that often cannot be directly identified and its success retrospectively evaluated. Small enterprises can benefit from the findings by realising that investment in HC applies not only to large multinational enterprises, and that they can also make investments in HC to a limited extent and thus improve their position in the market. The limitation is the selected research method, a questionnaire survey, and specifically the number of questions and respondents.

### Acknowledgment

This paper was supported by the project IVSUPS2303, Current topics of the social pillar of CSR related to acquiring and developing human resources.

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