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Continuing Vocational Training in Enterprises: Comparison of Selected Indicators of the Czech Republic and Hungary

David Michelini

University of West Bohemia, Czechia

• ORCID: <u>https://orcid.org/0009-0000-8405-7095</u>

Monika Kristl Volfová

University of West Bohemia, Czechia

• ORCID: <u>https://orcid.org/0000-0002-7512-410X</u>

Abstract

This article presents a comparative analysis of Continuing Vocational Training (CVT) in companies in the Czech Republic and Hungary based on selected indicators from the European Union's CVT survey. The study examines the participation of employees, the time dedicated to training, and the primary targeted skills of CVT courses. The results highlight significant differences in participation rates and focus on specific skills between the two countries, with a higher percentage of employee participation in training in the Czech Republic and a particular focus on IT skills in Hungary. The findings suggest that CVT plays a crucial role in enhancing employee skills and organizational competitiveness, highlighting the need to explore further the reasons behind these differences between countries and their impact on policy and practice in vocational education. The study also emphasizes the importance of adapting CVT programs to the rapidly changing labor market and the employer's need to effectively respond to new challenges in skills and competencies.

Keywords/key phrases: employee training, digital skills, education, continuing vocational training, CVTS

1. Introduction

The role of continuing vocational training (CVT) within businesses becomes increasingly important for competitiveness and sustainable development in the dynamic world of global economies. This article explores the role and development of CVT in the Czech Republic and Hungary, two nations with similar but different economic and educational systems.



This topic is crucial because it explains how workplace skill development and ongoing learning can promote organizational and individual growth. The adoption and execution of CVT are essential for keeping up with the quick pace of technological development and changing consumer demands in the context of the Czech Republic and Hungary, two EU members.

The aim of this paper is to conduct a comparative analysis of selected indicators related to continuing vocational training in enterprises between the years 2005 and 2020 in these two countries. Utilizing data from the Continuing Vocational Training Survey (CVTS) methodology, this study seeks to unravel patterns, disparities, and trends in CVT practices within Czech Republic and Hungarian enterprises.

The empirical gap filled by this article was identified based on a literature review conducted by the authors. In the scientific literature, there is no article comparing Czech Republic and Hungary in the examined area. The article provides a summary of data comparing Czech Republic and Hungary in continuing vocational training in companies.

This investigation is crucial for policymakers, educational institutions, and enterprises in both countries to understand the impact of CVT and to foster environments that encourage continual learning and skill development. By examining the evolution of CVT in the Czech Republic and Hungary, we aspire to contribute to the broader discourse on vocational education and training in the European context, offering valuable perspectives for other EU member states and beyond.

2. Theoretical Background

Employee education is an ongoing process that fosters professional growth, guarantees that employees can effectively contribute to the company's objectives, and keeps them abreast of changes in the industry (Armstrong & Taylor, 2020). It's common knowledge that investing in employee education is essential to keeping organizations competitive (Nafari & Rezaei, 2022).

Strategic approaches to employee education center on connecting learning activities to the organization's long-term objectives. The notion of strategic human resource management, which contends that strong alignment between company strategy and effective employee development is necessary for success, lends credence to this approach (Kaufman, 2012).

The efficiency of these strategies can differ based on the company's particular industry, corporate culture, and individual employee's preferred methods of learning (Jain & Moreno, 2015). Determining the return on investment in education requires measuring the effects of employee training (Phillips & Phillips, 2016). Both quantitative and qualitative methodologies are used in methods for evaluating the efficacy of education, and a variety of outputs, such as business outcomes and employee performance, must be considered (CA, 2018).

2.1. Human Resources

Human Resources (HR) plays an essential role in the movement and development of an organization. Each individual as an empowered entity contributes to the development of the organization as an asset. The global view of the importance of employees is becoming broader and more open. Employees are seen not only as a resource but also as an asset, capital and even an investment for the organization and the company, and it is crucial for companies to develop competent and high-quality human resources (Arifin et al., 2022). The success of the company is due to the fact that it has qualified employees (Infante, 2022). Quality employee performance has a positive impact on both the employees and the company (Djaelani et al., 2021). To



compete, every company must have qualified employees (David, 1995). In this case, this topic is an essential factor that determines the development of the company because employees act as a driving force to achieve the company's goals (Wahyudi et al., 2006).

The abilities, knowledge, experiences, and skills that employees possess, and which are valuable to their employers are collectively referred to as human capital (Knudsen & Lien, 2023). According to Voyvoda & Yeldan (2015), the development of human capital is essential for fostering innovation, productivity, and long-term business growth. Employees must undergo retraining and upskilling in order to be able to use new systems and processes as a result of the shift in skill and knowledge requirements brought about by the introduction of new technologies (David, 2015). Systems of flexible and lifelong learning are becoming more and more crucial to the growth of human capital (Boustan et al., 2014). One of the most important components in developing a competitive advantage is human capital (Kaufman, 2015). Higher human capital levels are associated with better performance and greater readiness for global competition (Rehman et al., 2023).

Human resource development is essentially aimed at achieving a competitive, skilled and competent workforce that supports the productivity and completeness of the company in today's global competitive environment (Santosa, 2002). Companies need to be able to overcome labour challenges and develop appropriate integrated management strategy (Sinambela, 2021). Focusing on both short-term and long-term strategy depends on their consistency (Hariani et al., 2019). At this stage, human resource development can be realized through training and human resource development activities, which will allow the full potential of each employee to be more effectively unlocked and utilized. One of the most essential functions of human resource management is training (Koteswari et al., 2020).

2.2. Employee Training

The process of improving employees' abilities, knowledge, and skills following by the demands of their job roles and the organization's overall strategic goals is known as employee training (Blanchard & Thacker, 2013). Training enhances the skills and knowledge of employees, thereby aligning their skills with the needs of the job (Koteswari et al., 2020). In addition to the benefits companies receive from employee training, costs are also reduced. To guarantee that learning objectives are met and training expenditures are profitable, adequate training should be methodically planned, carried out, and assessed (Yang, 2022).

A vast array of training techniques exists, ranging from conventional face-to-face seminars to contemporary virtual learning environments. The approach selected should consider the objectives of the company as well as the unique requirements and learning preferences of the staff (Noe, 2019).

Chen's (2014) study focuses on factors affecting employee retention and categorizes them into two categories: external and internal factors. While external factors are independent of the employer, training is recognized as one of the ways to retain employees for a more extended period, which implies that training is beneficial to both the employee and the company. For the same reason, untrained employees are likelier to leave their jobs and find another company. Therefore, the researcher wondered why organizations do not invest in training. Cloutier et al. (2015) advise employers to focus on long-term investments in training that are formal, jobrelated and accessible to all employees. Such investments increase employee loyalty and productivity, reduce turnover and provide companies with a higher competitive advantage and a more substantial financial base.



2.3. Additional Professional Training

In today's market that is changing quickly, the workforce needs to be more innovative, flexible, and competitive, and this can only be achieved by further professional education in enterprises (Onstenk & Duvekot, 2017). All learning activities that follow initial education and result in the development of new competencies or the enhancement of current ones are referred to as further professional education (Eurostat, 2020). Literature highlights the significance of continuing professional education, demonstrating how it is essential for employee retention and business expansion (Georgellis & Lange, 2007).

3. Methods

3.1. Aim

This paper aims to conduct a comparative analysis of selected indicators related to continuing vocational training in enterprises between the years 2005 and 2020 in the Czech Republic and Hungary.

3.2. Data Source

Secondary data, which will be obtained from the Eurostat database, specifically from the Continuing Vocational Training in Enterprises database, will be analysed and compared in a time context for the survey. CVT is an annual survey collecting data on the use of ICT, Internet, e-business and e-commerce in enterprises. The study focuses on the Czech Republic and Hungary. The period chosen was 2005 to 2020.

3.3. Statistical analysis

Descriptive statistics were carried out for relevant indicators for which comparisons were made between Czech Republic and Hungary over several years. This comparison serves to identify the development of individual indicators and simultaneously compare the level of both states with each other. Secondary data were obtained from the Eurostat database.

4. Results and Discussion

4.1. Participants in CVT courses by company category – a percentage of persons employed in all enterprises

The following table, Table 1, presents the percentage of participants in Continuing Vocational Training courses by company category between 2005 and 2020. It can be observed that in small enterprises (10-49 employees) in the Czech Republic, the share of employees who are receiving additional education increased rapidly in 2020 compared to 2005. In medium-sized (50-249 employees) and large (250 or more employees) enterprises, it has also recorded growth, but not so rapid. In 2020, there was a minimal decrease in small and medium-sized enterprises, which could be caused by the Covid epidemic.



TABLE 1. PARTICIPANTS IN CVT COURSES COMPANY CATEGORY - % of persons employed in All enterprises – CZECH Republic

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	43.5	46.5	80.9	79.2
Medium-sized (50 - 249)	61	60.1	84.1	80.4
Large (250 or more employees)	65.5	69.8	84.9	85.9

Source: Own compilation, based on Eurostat (2023)

FIGURE 1. PARTICIPANTS IN CVT COURSES BY SIZE COMPANY CATEGORY - % OF PERSONS EMPLOYED IN ALL ENTERPRISES – CZECH REPUBLIC



Source: Own compilation, based on Eurostat (2023)

Table 2 shows the values for Hungary. These values are very different from the Czech Republic, they are significantly lower. The difference between the individual surveys between 2005 and 2020 is not so obvious, these are minor changes that do not have a growth trend, but somewhat fluctuating. Just like in the Czech Republic, in Hungary in 2020, there is a visible decrease in values, which we can also assume was caused by Covid, the limitation of face-to-face contact and higher illness.



TABLE 2. PARTICIPANTS IN CVT COURSES BY COMPANY CATEGORY - % OF PERSONS EMPLOYED IN ALL ENTERPRISES - HUNGARY

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	7.2	10.8	10.6	8
Medium-sized (50 – 249)	11	14.6	14.6	11
Large (250 or more employees)	25	27.8	27.4	28.6

Source: Own compilation, based on Eurostat (2023)

FIGURE 2. PARTICIPANTS IN CVT COURSES BY COMPANY CATEGORY - % OF PERSONS EMPLOYED IN ALL ENTERPRISES - HUNGARY



Source: Own compilation, based on Eurostat (2023)

4.2. Hours spent in CVT courses by company category - hours per 1000 hours worked in all enterprises

Data at Eurostat shows number of hours (per 1000 hours worked) spent in Continuing Vocational Training. The data shows a noticeable difference between the Czech Republic and Hungary. In the Czech Republic, they devote more time to employee training. For both countries, not an increasing or a decreasing trend is visible in the data, the data fluctuates up and down over time. In the Czech Republic, there was a decrease for all companies in 2010, an increase in 2015 and then a decrease again in 2020.



TABLE 3. Hours spent in CVT courses by company category - hours per 1000 hours
WORKED IN ALL ENTERPRISES – CZECH REPUBLIC

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	4.6	3.3	5	4.2
Medium-sized (50 – 249)	7.4	4.7	6.7	4.7
Large (250 or more employees)	10.5	6.6	8	6.3

Source: Own compilation, based on Eurostat (2023)

On the other hand, in Hungary, the decline in 2020 was milder, for small enterprises employee training even increased rapidly, for medium-sized enterprises it remained at the same value.

 TABLE 3. HOURS SPENT IN CVT COURSES BY COMPANY CATEGORY - HOURS PER 1000 HOURS

 WORKED IN ALL ENTERPRISES - HUNGARY

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	1.5	1.2	1.1	3.3
Medium-sized (50 – 249)	2.1	1.9	1.4	1.4
Large (250 or more employees)	5.7	6.2	5	4.8

Source: Own compilation, based on Eurostat (2023)

4.3. Main skills targeted by CVT courses by type of skill and company category – a percentage of enterprises providing CVT courses

• General IT skills

Table 4 shows that Hungary trains IT skills much more than the Czech Republic. Given the geographical development of the population, both countries are very similar, so it is unlikely that Hungary would train more due to a higher age group of employees than the Czech Republic. This would mean that Hungary is generally worse off in IT skills if it is necessary to educate employees in companies so much more than in the Czech Republic. General IT skills is for example using a computer, word processing, electronic diary, simple spreadsheets or the internet.

In general, the Eurostat survey asked companies what areas they would most like to focus on in employee training. Main skills needed for the development of the enterprises by type of skill were: General IT skills, Professional IT skills, Management skills, Team working skills, Customer handling skills, Problem solving skills, Office Administration skills, Foreign



language skills, Technical, practical or job-specific skills, Oral or written communication skills, Numeracy and/or literacy skills, Other skills and competencies.

TABLE 4. GENERAL IT SKILLS - % OF ENTERPRISES PROVIDING CVT COURSES TARGETED TO GENERAL IT SKILLS IN 2020

Company category (by number of persons employed)	Czech Republic	Hungary
Small (10 – 49)	3.2	17.5
Medium-sized (50 - 249)	8.3	14.3
Large (250 or more employees)	16.1	22.1

Source: Own compilation, based on Eurostat (2023)

• Professional IT skills

In the area of professional IT skills (specialist knowledge or understanding such as producing web pages and writing complex programs), Hungary trains more than the Czech Republic. Interestingly, in the Czech Republic, there has been an increase in training compared to non-professional IT skills in only one category, at the same time Hungary has demonstrably grown in all three categories. Results are shown in Table 5.

TABLE 5. PROFESSIONAL IT SKILLS - % OF ENTERPRISES PROVIDING CVT COURSES TARGETEDTO PROFESSIONAL IT SKILLS IN 2020

Company category (by number of persons employed)	Czech Republic	Hungary
Small (10 – 49)	4.1	19.9
Medium-sized (50 - 249)	7.1	22.1
Large (250 or more employees)	11.5	26.9

Source: Own compilation, based on Eurostat (2023)

• Management skills

As shown in Table 6, the situation is no different with management skills (leading and managing staff, planning the activities of others). Hungary again trains significantly more, according to the numbers. However, this difference is proportionally smaller than with IT skills. This means that the Czech Republic places more emphasis on education on management than on IT skills.



The reason could be that people working in management often need to be computer literate hence more emphasis is placed on their training.

TABLE 6. MANAGEMENT SKILLS - % OF ENTERPRISES PROVIDING CVT COURSES TARGETED TO MANAGEMENT SKILLS IN 2020

Company category (by number of persons employed)	Czech Republic	Hungary
Small (10 – 49)	4.5	12.1
Medium-sized (50 - 249)	12.9	19.8
Large (250 or more employees)	27.5	43.3

Source: Own compilation, based on Eurostat (2023)

4.4. Enterprises providing training by type of training and company category – a percentage of all enterprises

As the last indicator, the authors chose Enterprises providing employee training - CVT courses according to the size of the enterprise. In the case of small enterprises, the difference between the Czech Republic and Hungary is apparent at first glance. While the Czech Republic ranges from 56 to 87 %, Hungary is on the borderline at only 19 to 32 %. The situation is similar for medium-sized enterprises, where again more enterprises are involved in training in the Czech Republic than in Hungary. Large enterprises are already at a equivalent level. There may be several reasons for this finding. For example, the Czech Republic SMEs could be more aware that employee training is the key to the competitiveness of the enterprise in the market, that it is the key to increasing employee satisfaction and also to improving production efficiency. Simultaneously, it is necessary to consider government help or cultural patterns. The findings for previous years are shown in Table 7 and Table 8.

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	56.2	57.2	87.6	82.3
Medium-sized (50 – 249)	87.9	82.3	94.8	91.9
Large (250 or more employees)	99.8	95.6	99.3	98.3

TABLE 7. ENTERPRISES PROVIDING TRAINING – CVT COURSES - $\%$ of enterprises – CZECH
Republic

Source: Own compilation, based on Eurostat (2023)



TABLE 8. ENTERPRISES PROVIDING TRAINING – CVT COURSES - % OF ENTERPRISES - HUNGARY

Company category (by number of persons employed)	2005	2010	2015	2020
Small (10 – 49)	26.3	32.2	26.2	19.1
Medium-sized (50 – 249)	64.5	65.1	53.4	43.0
Large (250 or more employees)	86.2	92.4	82.7	74.3

Source: Own compilation, based on Eurostat (2023)

Figure 3 shows a graphical comparison of the two countries and the difference in values for SMEs.

Figure 3. Enterprises providing training – CVT Courses – CZECH Republic and Hungary



Source: Own compilation, based on Eurostat (2023)

5. Limitations

It is also necessary to mention the limitations of this descriptive study. Outcomes are measured once every five years, which is a long period with no known fluctuations between them. Simultaneously, the reasons why the resulting data are different between the countries studied may vary.

In general, the Eurostat survey asked companies what areas they would most like to focus on in employee training. The three most mentioned categories were General IT Skills, Professional IT Skills and Management Skills. This does not mean that all countries voted this way. It is possible that Hungary, for example, would have different top three areas.



The next limitation of this article is the measurement of data, which the article refers to. The measurement is based solely on the self-declarations of representatives of the individual companies and is not measured based on actual control.

6. Discussion

The presented results in this article form a general overview from publicly available data and open great possibilities for subsequent research concerning this topic. In future research, it will be necessary to consider the fluctuation of the level of lifelong learning. This can be different in countries that future authors decide to compare. Another interesting future research could pay more attention to transformations that are forcing changes in the world. These also affect the education of employees and their skills in selected professional groups. Specifically, this includes, for example, the V4's shift away from coal, the war between Ukraine and Russia, the import of energy resources from Russia, and so on.

7. Conclusion

This study presented a comparative analysis of selected indicators related to Continuing Vocational Training (CVT) in enterprises in the Czech Republic and Hungary from 2005 to 2020. The primary findings reveal significant differences between the two countries regarding employee participation in CVT courses, the number of hours dedicated to these courses, and the type of targeted skills. Particularly noteworthy is the significantly higher emphasis on IT skills in Hungary compared to the Czech Republic.

This study provides valuable insights into the effectiveness and focus of CVT programs in both countries, which has significant implications for policymakers, educational institutions, and businesses. The results suggest substantial cultural and structural differences in CVT between the Czech Republic and Hungary, which could affect the overall effectiveness and focus of educational programs.

For future research, it is essential to focus on a deeper analysis of the causes of these differences and their impact on the competitiveness and innovation capacity of enterprises in both countries. It would also be beneficial to examine how the COVID-19 pandemic has influenced approaches to CVT and how trends in corporate education are changing in the following years. Particularly relevant would be to explore how enterprises are adapting to the growing needs of digital transformation and what impact this adaptation has on developingkabou employee skills.

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Corresponding Author

The corresponding author for this manuscript is David Michelini who can be contacted by email via michelin@fek.zcu.cz

