


# Increasing Human Capital by Investing in Training of Employees

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**Abstract**—This paper deals with the investment in employees in organizations by improving the skills required to perform work tasks. Previous theoretical constructs and empirical findings have shown that knowledge-intensive work practices can lead to increased innovation activities, better employee engagement, higher job satisfaction and lower employee turnover. This paper draws mainly on data from the Harmonized Survey on Continuing Vocational Training in Enterprises and compares the two groups of European countries by economic sector and company size.

**Keywords** - enterprise, human capital, training costs, vocational training

## I. INTRODUCTION

In their ground-breaking work [1], they presented a theoretical model that explains why companies organise the training of their employees. The background for the conceptualization of the theory was found in the earlier work where it was explained that two groups of training can be observed [2]. The general training leads to higher wages and increases workers' employment opportunities; therefore, workers are the ones who should provide and pay for this training – they should be independent labour market observers focusing on the needs. The second group of training is training initiated and provided by companies; thus, companies are the ones who should provide financial resources for employee training. To summarise, [1,3] states that based on information about the skills of entry-level workers, companies may be willing to fund the general training of workers at the beginning of their careers. One reason for investing in general

training that contributes to increasing human capital could be that firms expect a monopsony power due to asymmetric information about an employee's skills and the training offered. The authors found empirical evidence for this theoretical construct [1,3]. However, there are many other studies that examined different characteristics of trained workers and showed the differences between training participants and possible advantages for the companies that offer specific training to their workers rather than only general training (via apprenticeship) [4-10].

This paper deals with the ability of companies to train their employees using the example of the Serbian corporate sector and compares the statistical results with the former CEE countries, which are now members of the EU, and with the Balkan countries. The comparisons are made depending on the availability of data. Research questions may arise from the fact that the observed EU countries perform better than the Balkan countries in terms of employee participation in company-specific training. The present study deals with some statistical facts provided by monitoring company activity using a standardized framework provided by the Eurostat Continuing Vocational Training Survey [11]. Some previous studies conducted for Serbia found that companies invest in the training of their employees and that the training intensity of companies in the early stage of transition to a market economy may be related to the multinational and privatized companies that want to occupy the domestic market [12].

The structure of the paper is as follows. After a short introductory section, a literature review is



given, which provides the contextual background of the theory and the empirical findings to date. The data used and the methods applied are described separately. The main findings, based on the comparison within the sample of selected countries, are presented and discussed with reference to the results of studies conducted in other countries. Conclusions and recommendations based on the research findings are presented separately.

## II. LITERATURE REVIEW

There is a strong positive and statistically significant relationship between the exercise of knowledge in an economy and personal commitment to continuing learning. When examining the relationships between knowledge intensity and work organization in relation to business practices in different European countries [13], economies that rely more on knowledge intensity were found to adopt more knowledge-intensive strategies, including learning through firm-specific training, general training, and similar practices related to work organization, in order to grow and survive in a knowledge-intensive environment. The authors also found confirmation through an empirical experiment that countries that are more inclined to adopt various knowledge-intensive work practices lead in innovation activities. To illustrate this, the authors' study shows that European countries such as Sweden, Finland and the United Kingdom rely more heavily on knowledge-intensive working practices than, for example, the former Central and Eastern European (CEE) transition countries Bulgaria, Lithuania and Romania, which are also less innovation-intensive.<sup>1</sup>

Companies that offer their employees specific training have a higher level of job satisfaction than companies that do not organize training. This premise leads to a higher commitment to the work tasks and increases the profitability of the employees (of the company), but also reduces the number of jobs quits and employee turnover. Some empirical results confirming these assumptions can be found in the data from the National Longitudinal Survey of Youth 1997 cohort [8] using the variable measuring job satisfaction on a Likert-based 5-point scale, various work-related training offered by companies, and other individual

characteristics of workers as independent variables. Furthermore, there is a positive and statistically significant association between promotion within the same company offering training and the job satisfaction variable.

Looking at the development of human capital and the opportunities for participation in continuing education from the perspective of adult education of labour market participants, several dimensions of individual practise of adult education in European countries can be identified in the empirical studies. Using data from the Programme for the International Assessment of Adult Competencies [14], it was found that participation in adult learning is greater in countries with high participation rates (such as Norway, Sweden and the Netherlands), while on the other hand, in countries with relatively low participation rates (such as France, Slovakia and Poland), participation is largely determined by educational attainment. There are also studies that show that the level of education is positively related to participation in adult education, meaning that a higher level of education leads to higher participation in additional education and training, while workers with a lower level of education have barriers to participating in this type of adult education [7,15]. This situation is particularly characteristic of economies in which the supply of training is reduced due to the low willingness of companies to provide training and the low willingness of employees to retrain or upskill.

As some evaluation studies show, some European countries (e.g. Romania and Greece) lag behind more active countries in providing more opportunities for participation in adult education [16]. European education systems are different, and it is suggested that policies should be targeted at each individual country in order to reach the average values of the indicators for monitoring the performance of the education system at EU level. A fixed-term employment contract also reduces the likelihood of someone participating in training, as does the age of the employee. The latter is very important because, due to the aging of the population and the demands created by the impact of technology on the labour market, this can lead to an increase in the unemployment rate among older workers in

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<sup>1</sup> The data collected as part of the 2019 European Business Survey is available for the EU-27 and the United Kingdom [13].

the long term and thus to an increase in social pressure.

### III. METHODOLOGY

The methodological framework of this paper is mainly based on the data on the implementation of continuing vocational training (CVT) collected through the harmonized questionnaire distributed to companies in European countries. This part of the European statistics provides a comprehensive set of data collected as part of the Continuing Vocational Training Survey [11]. The data is available for the EU-27, the United Kingdom, Norway, Serbia and North Macedonia. In this survey, data is collected regularly over a period of five years, so that the latest data corresponds to the 2020 Continuing Vocational Training Survey. Only enterprises employing 10 or more employees participate in the survey and the NACE Rev. 2 classification of economic activities is used to further classify the participating enterprises.

Serbia participated in the Continuing Vocational Training Survey for the first time in 2020, while North Macedonia participated in the last two surveys. This secondary dataset provides a basis for a comprehensive understanding of the training needs of companies, as well as the financial resources used at company level and the share of CVT costs in the total labour costs of employees participating in this form of training. The data is collected by the Statistical Office of the Republic of Serbia (SORS) [17]. In order to show the other side of adult education, data from the Adult Education Survey is also used for comparison [18,19].

Several other data sources have been identified in previous studies. For example, the OECD uses the case study- based methodology to provide evidence for policy purposes on what type of training companies most commonly provide, how they tend to provide training, and how they make decisions about employee participation [20]. The results of the OECD study based on qualitative data may be relevant for the discussion of the main findings obtained through the statistical analysis of selected CEE countries, EU members and two non-EU countries, Serbia and North Macedonia.

### IV. RESULTS AND DISCUSSION

Fig. 1 shows the extent of the total costs of continuing vocational training in companies for

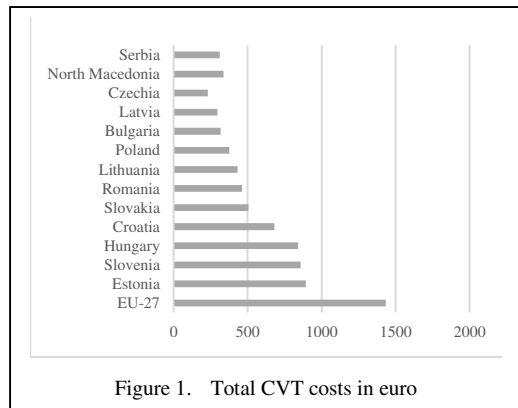


Figure 1. Total CVT costs in euro

the selected CEE countries, two Balkan countries and the EU-27. All data in this section are taken from the Continuing Vocational Training Survey (2020 edition), unless otherwise explained [11]. No country in these regions comes close to the EU-27 average, which is estimated at EUR 1,433. The three countries with the best results, where companies invest the largest amounts in increasing the human capital of their employees, are Estonia, Slovenia and Hungary (investments range between 840 and 892 euros between the first and third country), while the countries with the worst results are the Czech Republic, Latvia and Bulgaria (amounts range between 232 and 318 euros). Companies in Serbia and North Macedonia invest an average of EUR 312 and EUR 337, respectively [11]. The authors in [21] found that the knowledge acquired through on-the-job training can contribute significantly to the transition to higher-value tasks that form a stable working environment. The observed absolute differences in investment in CVT between CEE countries, EU Member States and the two Balkan countries can be linked to the strategic framework and commitments related to the convergence rules for education systems in the EU, which the former countries have to follow [16]. The other practical but more realistic fact is that the actual labour costs are higher in the EU countries compared to the Balkan countries [4,11].

The number of companies offering continuing education each year may depend on whether the needs of certain sectors of the economy are prioritized and met, the number of employees participating in continuing education, the financial resources available for this activity and other reasons. Table I shows the distribution of companies providing continuing training in selected countries and broken down by economic

TABLE I. SHARE OF COMPANIES PROVIDING CVT.

CEE Country	% of all companies by economic activity					
	Total	B, C, D, E	F	G, H, I	J, K	L, M, N, R, S
Bulgaria	41.1	38.6	51.0	34.6	58.8	47.4
Czechia	85.9	88.8	90.0	82.7	92.0	82.2
Estonia	79.8	79.6	73.2	79.8	91.4	80.8
Croatia	48.2	48.3	37.1	44.1	74.6	59.4
Latvia	96.8	97.5	98.4	96.9	95.1	94.8
Lithuania	54.1	55.1	49.2	47.9	79.2	66.0
Hungary	37.7	40.3	33.4	32.5	65.0	42.0
Poland	40.9	61.1	34.5	35.7	61.9	44.7
Romania	17.5	21.7	16.3	13.2	30.8	18.4
Slovenia	78.4	82.0	61.8	78.1	88.0	85.8
Slovakia	58.9	62.9	65.6	53.0	84.1	54.9
North Macedonia	56.2	55.4	52.9	52.8	61.5	68.6
Serbia	49.2	49.2	53.1	41.2	65.0	56.5

Notes: According to NACE Rev. 2. Industry (B, C, D, E); Construction (F); Wholesale and retail trade, transport, accommodation and food service activities (G, H, I); Information and communication; financial and insurance activities (J, K); Real estate activities; professional, scientific and technical activities; administrative and support service activities; arts, entertainment and recreation; other service activities (L, M, N, R, S) [11].

sector. For example, if the number of companies operating in a particular economic sector is low, it is more likely that a higher percentage of these companies will provide training for their employees. This is particularly true for companies operating in the construction sector, where the proportion of companies providing training accounts for more than half of the companies participating in the CVT Survey, apart from some countries where these activities may vary due to the economic cycle.

A similar situation can be observed in the industrial sectors, but for a different reason. These industries rely more on a traditional work environment which, except in special cases, requires continuous development of workers' skills to accommodate new machines, processes, etc., due to adaptation to technological change. Serbian companies operating in the business and similar services, information and financial services and construction sectors are more likely

TABLE II. SHARE OF CVT IN TOTAL LABOUR COSTS.

CEE Country	% of all companies by economic activity					
	Total	B, C, D, E	F	G, H, I	J, K	L, M, N, R, S
Bulgaria	0.7	0.9	0.2	0.3	1.0	0.7
Czechia	0.9	0.8	0.6	0.7	1.6	0.7
Estonia	1.6	2.0	0.9	1.2	1.8	1.5
Croatia	0.9	0.6	0.9	0.5	2.5	1.2
Latvia	0.6	0.4	0.5	0.4	0.8	0.9
Lithuania	0.7	0.6	0.5	0.6	1.7	0.7
Hungary	1.2	0.1	1.4	1.8	2.6	1.7
Poland	0.6	0.7	0.3	0.5	1.2	0.6
Romania	0.6	0.6	0.2	0.6	1.1	0.5
Slovenia	1.4	1.6	0.3	1.3	1.9	1.1
Slovakia	1.3	1.1	1.2	0.8	2.0	1.7
North Macedonia	0.7	0.9	0.3	0.4	0.7	0.7
Serbia	0.6	0.6	0.2	0.5	1.0	0.8

Notes: According to NACE Rev. 2. Industry (B, C, D, E); Construction (F); Wholesale and retail trade, transport, accommodation and food service activities (G, H, I); Information and communication; financial and insurance activities (J, K); Real estate activities; professional, scientific and technical activities; administrative and support service activities; arts, entertainment and recreation; other service activities (L, M, N, R, S) [11].

to provide training than those operating in the hospitality and manufacturing sectors. This finding is in line with some previous empirical results showing that low-educated and older workers have lower chances of being selected to participate in specific training in their companies [e.g. 7,14,15,22]. Combining the results for Serbia with the results of the Adult Education Survey, it can be concluded that employed women and higher educated persons have greater chances of receiving additional training. The proportion of women with low and high levels of education who participated in adult education in Serbia was 1.8% and 37.6% respectively, while the corresponding proportions for men were 7.6% and 26.4% [18].

Table III shows the share of vocational training costs in total labour costs as a function of company size. Among the CEE countries that are members of the EU, Estonia, Slovenia, Slovakia and Hungary have the largest share of

training costs in the total labour costs of those employees who participate in training measures. The shares are between 1.6% and 1.2% of the total labour costs of the companies surveyed. However, the distribution of training costs across the groups of economic sectors is somewhat different (see Table II). In most of the countries surveyed, the share of CVT costs in total labour costs is lower for small companies than for medium-sized and large companies. However, Serbia is one of the countries in which the share of CVT costs in total labour costs is almost the same, depending on the size of the company.

The cost of continuing vocational training may depend on the number of employees who require specific training offered by the company due to adaptation to technological change or the introduction of new standards in the company's operations. This is necessary for companies to remain competitive, as required by competition and market demands [12].

TABLE III. SHARE OF CVT IN TOTAL LABOUR COSTS BY COMPANY SIZE.

CEE Country	% of all companies by persons employed			
	Total	10-49	50-249	250 +
Bulgaria	0.7	0.3	0.6	1.0
Czechia	0.9	0.3	0.7	1.2
Estonia	1.6	1.1	1.8	2.0
Croatia	0.9	0.6	0.8	1.3
Latvia	0.6	0.4	0.5	0.8
Lithuania	0.7	0.5	0.7	0.9
Hungary	1.2	1.3	1.4	1.0
Poland	0.6	0.2	0.5	0.9
Romania	0.6	0.1	0.4	0.9
Slovenia	1.4	1.0	1.7	1.4
Slovakia	1.3	1.0	1.1	1.4
North Macedonia	0.7	0.5	0.6	0.9
Serbia	0.6	0.7	0.7	0.6

Notes: The statistical population is limited to companies with at least 10 employees [11].

Certain differences can also be observed between local and international companies, particularly in post-transition countries, with international companies leading in providing CVT for employees.

As Table IV shows, the costs of continuing vocational training correlate significantly with the level of education of employees.<sup>2</sup> Economic sectors such as information, communication, finance and insurance, which employ more skilled workers, require more specific training and standards to be adopted. In Serbia, this group of economic sectors is also the leader in terms of the average costs that companies spend on employee training, together with business services and similar activities, which rank second in terms of the average cost of training.

TABLE IV. COSTS OF CVT BY ECONOMIC ACTIVITY.

CEE Country	Cost per participant in euro				
	B, C, D, E	F	G, H, I	J, K	L, M, N, R, S
Bulgaria	350	102	155	498	349
Czechia	209	133	176	706	188
Estonia	1419	672	596	881	737
Croatia	465	1161	387	1163	898
Latvia	236	289	199	557	489
Lithuania	394	421	337	843	374
Hungary	1154*	1029	1056	1699	1799
Poland	426	369	317	575	347
Romania	373	302	462	701	509
Slovenia	941	433	759	1097	688
Slovakia	424	509	281	910	914
North Macedonia	422	267	210	390	314
Serbia	311	210	249	395	334

Notes: According to NACE Rev. 2. Industry (B, C, D, E); Construction (F); Wholesale and retail trade, transport, accommodation and food service activities (G, H, I); Information and communication; financial and insurance activities (J, K); Real estate activities; professional, scientific and technical activities; administrative and support service activities; arts, entertainment and recreation; other service activities (L, M, N, R, S). \* Data for 2015 [11].

<sup>2</sup> The data for Hungary comes from the 2015 edition of the Continuing Vocational Training Survey due to the break in data series.

Data on investment in continuing vocational training at the level of individual economic activities, although very useful, are not available on the Eurostat platform [11]. Only harmonized data grouped by economic activity are available and used for the analysis. The reason for this could be related to the definition of the stratified sample and the degree of representativeness of the companies by specific sectors. Some methodological explanations on the data collected from the Serbian companies can be found in [17].

While large companies have a higher average share of training costs in total labour costs due to the larger number of employees, medium-sized companies can incur the highest average training costs in absolute terms, as Table V shows. Certainly, training costs are a greater burden for small companies compared to the largest ones and can have an impact on employee turnover if they are not satisfied with the treatment in terms of training opportunities [8]. In Serbia, on the other hand, the average training costs are inversely proportional to the size of the company, according to the latest edition of the CVT

Survey. The average CVT cost per participant in Serbian companies are higher for small companies than for large companies, while the opposite conclusion can be drawn from the data for North Macedonia (see Table V). The factors that contribute to small companies in Serbia spending more on CVT may be directly related to the industry in which the company operates. Small companies are burdened with some administrative costs related to issuing the certificates they need to hold and renew, so they must spend certain resources on training their employees, as some previous studies for Serbia have shown [12].

## V. CONCLUSION

Investing in human capital through the provision of specific training has numerous benefits for both companies and employees. The analysis in this paper is based on the data collected as part of the Harmonized Survey on Continuing Vocational Training in Companies, which allows a comparison between countries. Two groups of countries are compared: the CEE countries, which are members of the EU, and the two Balkan countries Serbia and North Macedonia, which are the only countries in this region participating in this Eurostat project.

Compared to the EU average, companies in the selected CEE countries have lower average costs for the professional development of their employees. Serbian companies spent slightly less on training compared to North Macedonian companies, as the data from the 2020 edition of the CVT Survey shows.

The results differ considerably between countries when companies are considered in relation to the group of economic sectors and company size. In general, larger companies with more employees have a larger share of training costs compared to total labour costs. However, when it comes to the absolute amounts spent on employee training, medium-sized companies have higher average expenditure in most countries. In Serbia, on the other hand, small companies have higher training costs per participant on average compared to medium-sized and large companies. Global trends in investment in vocational training show that companies are carefully allocating their resources to training their employees. In doing so, they aim to measure employee performance, particularly through employee commitment to the organization and job tasks, job satisfaction and impact on performance, and whether

TABLE V. COSTS OF CVT BY COMPANY SIZE.

CEE Country	Cost per participant in euro		
	10-49	50-249	250 +
Bulgaria	214	354	334
Czechia	71	179	332
Estonia	801	1182	740
Croatia	1031	777	587
Latvia	325	285	292
Lithuania	465	531	382
Hungary	1309	1541	614
Poland	315	339	397
Romania	256	583	453
Slovenia	927	1157	705
Slovakia	587	586	464
North Macedonia	284	280	403
Serbia	435	338	271

Notes: The statistical population is limited to companies with at least 10 employees [11].

employees intend to leave the organization. Investment in human resources is a dynamic process and depends largely on the level of organizational culture, but also on the actual needs and pressures of the market to keep up with the competition. As some meta-analyses show, the regional context is therefore important to a certain extent when observing differences between companies [23].

While the findings presented in this paper are general in nature, they may trigger certain recommendations for both companies and employees in terms of expected trends in skills investment. Identifying the causal relationship between participation in training and the determinants derived on the basis of the relevant data and the characteristics of companies is part of the next research agenda. In this direction, new research should be proposed that addresses the links between employee participation in training, measured e.g. by employee commitment and job satisfaction factors, on the one hand, and company performance, e.g. in terms of finance, market or employment, on the other. The mediator approach should also be used to statistically isolate more precise estimates of causal relationships.

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