

# Chapter 11.

## Human resources in Visegrad countries

*Zdenka Matouskova, Vera Czesana and Vera Havlickova*

### 11.1. Introduction

Human resources are considered the primary asset society has. This paper aims to

- a) compare this asset among the Visegrad Group (V4) countries, and
- b) to see how it relates to the average achieved by 25 member countries of the European Union (EU-25).

The comparative analysis is based on a set of selected indicators, which map, directly or indirectly, the qualitative characteristics of human resources.

Firstly, attention is paid to the education structure of the population, the quality of tertiary education and educational mobility. The degree of respecting the need for updating and enhancing knowledge and skills acquired in initial education is established based on participation of the adult population in continuing education. What matters is not only participation, but also educational outcomes, which are assessed by means of adult literacy. Moreover, data concerning expenditure on initial education and flexibility of the population are assessed. The indicators of the quality of human resources were selected in view of their availability for all the countries, and in view of their covering various qualitative aspects.

### 11.2. The educational attainment and expenditure on education

Well-educated population is both a prerequisite for and a consequence of knowledge-based economies. Not only can a well-educated population develop and

apply new findings, but also it is also more technologically advanced, demands more sophisticated goods and services and, in this way, stimulates businesses to pursue innovation.

### 11.2.1. The education structure of the population

As part of the Lisbon Strategy, the European Union seeks to ensure, as one of its objectives, that 80% of the population aged 25-64 should have at least secondary education by 2010. In 2005, this EU-25 average was some 71% of the population aged 25-64. **In all V4 countries, the proportion of the population with at least secondary qualifications was higher than the EU-25 average.** Moreover, except Hungary, all the countries surpassed the Lisbon benchmark as early as 2005. These favourable figures were achieved thanks to the high proportion of people with secondary qualifications (ISCED 3-4). Conversely, the **proportion of people with tertiary education (ISCED 5-6) is relatively far below the EU-25 average.** Although the situation in this respect is improving in all V4 countries, the legacy of the past when access to tertiary education was very limited has not yet been redressed. While developed EU countries have, in essence, completed transition from an elitist system of tertiary education to a mass one, the process is still underway in post-communist countries. The capacity of traditional universities is increasing, and the range of shorter, more practice-focused programmes is being expanded (see table 11.1).

**Table 11.1. Educational structure**

	2000 (ISCED)			2005 (ISCED)		
	3-4	5-6	3-6	3-4	5-6	3-6
EU-25	46.3	20.3	66.6	47.9	22.9	70.8
Czech Rep.	74.5	11.5	86.0	76.9	13.1	90.0
Hungary	55.3	14.1	69.4	59.3	17.1	76.4
Poland	68.5	11.4	79.9	68.0	16.8	84.8
Slovakia	73.5	10.3	83.8	73.9	14.0	87.9

Source: own counts based on EUROSTAT (2006).

However, the countries differ in terms of the intensity of the progress made. In 2000-2005 all countries except the CR experienced an above average (compared to the EU-25) increase in the proportion of individuals with tertiary qualifications. In the EU-25 the proportion increased by 2.6 p.p., while it was 5.4 p.p. in Poland, 3.7 p.p. in Slovakia, and 3.0 p.p. in Hungary. However, in the CR the figure was 1.6 p.p. only. Moreover, the CR constantly shows the lowest proportion of the population with tertiary qualifications (13.1% in 2005), while Hun-

gary has the highest proportion (17.1% in 2005). In view of lower dynamics of its progress Hungary may soon lose this, good comparative position and be replaced by Poland. For the sake of international comparison, it is also necessary to take account of the differences in education systems. Education systems in some countries make it possible to acquire a vocational qualification at upper secondary level, whereas in other countries a comparable qualification can be obtained at tertiary level, mostly in short programmes.

### 11.2.2. The quality of tertiary education

Apart from increasing the proportion of people with tertiary qualifications, the quality of this education is also important. The quality of higher education institutions increases the competitiveness of the workforce in a given country, and it is one of the key factors considered by investors when deciding on placing investments with a high value added. High-quality education implies the capacity both to take over technological innovation and to play an active role in its development. The quality of tertiary education is evaluated annually by the Swiss International Institute for Management Development via questionnaire surveys among local as well as foreign experts and executives. The respondents answer the question of "How does the quality of higher education correspond to the needs of a competitive economy"? The quality of tertiary education is rated on a 0-10 scale, where the higher the ranking, the better the quality satisfies the needs of a competitive economy (see table 11.2). In 2006, the quality of tertiary education in the CR ranked at the top (6.1). Hungary (5.5) was the closest to the EU-25 average (5.6), while Poland and Slovakia ranked below the average (4.8 and 4 respectively). Changes in the quality of tertiary education can be very gradual and of a long-term nature. The year-on-year changes in the ratings of the CR and Poland in 2001-2006 show both upwards and downwards oscillation. What is alarming, though, is the rating of Hungary and Slovakia where a clearly negative trend can be identified. It seems that the quantitative development of tertiary education in these countries is accompanied by a decrease in its quality.

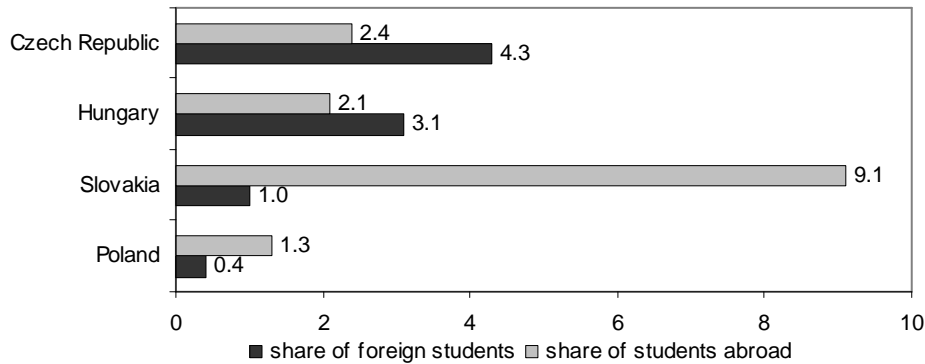
**Table 11.2. Quality of tertiary education in 2001-2006**

	2001	2002	2003	2004	2005	2006
Czech Rep.	5.4	6.0	6.3	5.1	5.7	6.1
Hungary	7.0	7.0	6.7	6.1	6.4	5.5
Poland	4.4	3.9	4.7	5.3	4.3	4.8
Slovakia	6.2	6.4	5.9	5.7	5.2	4.0
EU-25	5.7	5.8	5.8	5.7	5.4	5.6

Source: IMD (2006).

The quality of national systems of tertiary education is, to a large degree, linked to the **openness of universities to foreign students and professors**. This openness brings along enhanced quality of study programmes and methods of instruction thanks to visiting educationists, as well as foreign experience acquired by local educationists. The presence of foreign students generates not only motivation, but also pressure to increase the quality of teaching. If they pay tuition fees, additional resources for further development can be produced in this way. The studies of local students abroad facilitate comparisons of the quality of education and, possibly, result in increased demands for the quality of educationists.

**Figure 11.1. Share of foreign students, 2003 (in %)**



Notes: Poland – without doctoral programmes ISCED 6 and without tertiary programmes ISCED 5B.

Source: OECD (2005)

The openness of higher education institutions (see figure 11.1) expressed by the proportion of foreign students is the highest in the CR. A relatively high interest in studying at Czech higher education institutions need not be driven solely by the quality of programmes on offer, but also their financial affordability and language affinity. Roughly, a half of foreign students in the CR come from Slovakia and takes advantage of free studies in Czech. Social sciences and medicine are the most in demand (approximately one third respectively one fourth of foreign students). Hungary also showed a high proportion of foreign students in 2003, although, according to experts, the quality of its tertiary education is deteriorating. However, this downward trend started at a relatively high level – in 2003 the quality of Hungarian higher education ranked the best within V4.

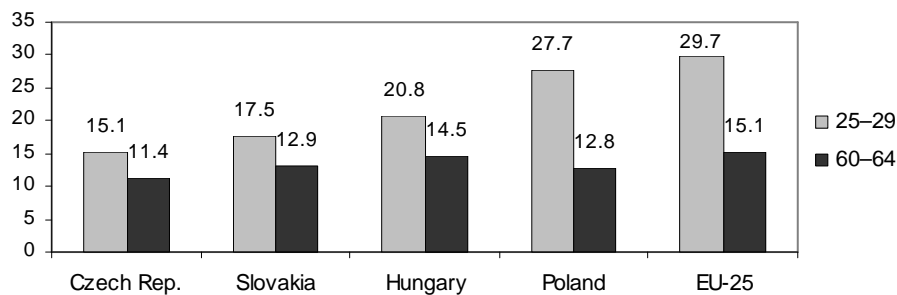
Slovakia has the highest proportion of outgoing students, as well as the largest difference between this proportion and that of incoming students. On the contrary, tertiary education in the CR and in Hungary is more open towards receiv-

ing foreign students as compared to sending students abroad. This comparison implies that the level of openness of tertiary education is the lowest in Poland. **The level of openness of tertiary education is essentially in line with the evaluation of the quality of tertiary education.** A higher ranking goes hand in hand with a higher proportion of incoming students, and a lower score is associated with a higher proportion of students studying abroad.

### 11.2.3. Educational mobility

It is important for the development of knowledge-based economies that individuals entering the labour market have a higher level of educational attainment than those leaving it. Educational mobility can be expressed by comparing the proportion of people with tertiary educations in the 60-64 age group (the leaving group) with that in the 25-29 age group (the entering group). Educational mobility is considerably influenced by the proportion of individuals with tertiary education in the outgoing group aged 60-64. On the one hand, a large proportion of them in this group makes it more difficult to attain higher mobility levels, as the proportion of people with tertiary qualifications has a certain natural ceiling which can only be surpassed by decreasing the demands placed on this education in terms of difficulty. On the other hand, it has positive effects, as the social environment in which young people grow up largely influences their educational aspirations and their view of the importance of education for their professional, personal and civic lives. Research in the CR shows that educational aspirations of young people are influenced by parents' education rather than by the family financial situation. If the influence of a broader family background is negative in terms of educational aspirations, it should be alleviated by the education system so that everyone should achieve education corresponding to their ability.

**Figure 11.2. Educational mobility between the 25-29 and 60-64 age groups (2005, in %)**



Source: EUROSTAT (2005b).

According to 2005 data, the **educational mobility is positive** in the EU-25 average terms (see figure 11.2). The proportion of people aged 25-29 who have tertiary qualifications is twice as high as compared to the 60-64 group. Poland was the only V4 country that showed a comparable level of educational mobility with the proportion of the “young population” with tertiary more than twice as high as that of the “older population” (28% vs. 13%). It is true of the other V4 countries that the lower the proportion of the older population with tertiary qualifications, the lower the educational mobility. The lowest level of educational mobility was identified in the CR, followed by Slovakia.

#### 11.2.4. Expenditure on education

Expenditure on education constitutes an investment that supports economic growth, increases labour productivity and, if equal access to education is ensured, enhances social cohesion. The level of expenditure on education reflects not only the economic situation, but also the importance attributed to education by society, business, and individuals. The total expenditure on education consists of public and private expenditure. It is virtually impossible to assess whether or not the expenditure is sufficient, as there is no generally valid criterion expressing an optimum level of expenditure per learner. It is therefore assumed that higher expenditure is associated with better educational services and outcomes. Although the amounts spent on education constitute a major pre-determinant of the quality of the education system, **educational outcomes do not only depend on financial expenditure**. They are a combination of these and the related material facilities on the one hand, and modern education policies including a timely implementation of necessary reforms regarding the content, methods, and organisation of education on the other hand. Finally yet importantly, these outcomes are also affected by teachers’ quality and commitment, and by students’ motivation and willingness to learn.

Expenditure on initial education depends on a number of inter-dependent factors such as the demographic structure of the population, the rate of participation in education, the level of GDP, the level of wages in the education sector, and the education system as a whole. In 2003, public expenditure on educational institutions in the EU-25 was, on average, 5.2% of GDP (see table 11.3). The CR and Slovakia were below this average (4.5% and 4.3% respectively), while Poland and Hungary were above this average (5.6% and 5.9% respectively). The European Commission encourages member countries to increase investment in education, but, in view of limited public finances, it stresses **the need for a larger involvement of private resources**, particularly where there is a high level of return on this investment at individual and corporate levels.

**Table 11.3. Public and private expenditure on educational institutions as a proportion of GDP in 2003 (in %)**

expenditure	Hungary	Poland	EU-25	Czech Republic	Slovakia
public	5.9	5.6	5.2	4.5	4.3
private	0.6	0.7	0.6	0.4	0.5
total	6.5	6.3	5.8	4.9	4.8

Source: EUROSTAT (2007).

The volume of private expenditure on educational institutions reflects not only the importance attributed to education by individuals and private businesses, but also the proportion of private schooling in the education system and the rate of co-funding within public education. There is also the impact of legal regulations fostering indirect instruments for supporting private investment in education (tax allowances etc.). Private expenditure on educational institutions as a proportion of GDP is lower than 1% in all EU countries; the EU-25 average was 0.6% in 2003. Of V4 countries, Poland had the highest figure (0.7%), the lowest level was shown by the CR (0.4%). International as well as year-on-year differences can also be affected by the evaluation methods, as private expenditure is identified at the level of individual institutions, which need not be always willing to disclose all private revenues, and so the expenditure levels may be undervalued.

What is important is not only the level of investment in initial education, but also its effectiveness. One of the ways of comparing, internationally, the effectiveness of expenditure on education is to compare cumulative expenditure per pupil aged 6-15 with the average literacy of 15-year-old pupils. The table 11.4 confirms that educational outcomes are not merely and directly dependent on expenditure, and that lower expenditure does not automatically mean lower literacy levels. The best expenditure-literacy ratio was achieved by Slovakia; the worse figure was shown by Hungary.

**Table 11.4. The relationship between the average level of literacy of 15-year-old pupils and expenditure per pupil aged 6-15**

	Slovakia	Poland	Czech Republic	Hungary
Average literacy	489	493	511	494
Cumulative expenditure	17 612	26 544	28 444	30 556
Expenditure/Literacy	36.1	53.8	55.7	61.9

Note: The average level of literacy is calculated as a non-weighted average of mathematical, reading, scientific and problem-solving literacy. The expenditure per pupil aged 6-15 was calculated using data on expenditure on education for 2002 and it is expressed in USD using PPS.

Source: own counts based on OECD (2005).

### 11.3. Continuing education and the outcomes of lifelong learning

In addition to initial education, the quality of human resources is influenced by continuing education. As the flows of innovation and technological changes accelerate and penetrate all economic and social activities, the knowledge gained during initial education becomes outdated more and more quickly. The ageing of the European population results in a situation where the need for new knowledge and skills cannot only be satisfied by the generation entering the labour market. The older generations are forced to update and expand their knowledge. What is important is not only participation in lifelong learning, but also learning outcomes expressed in terms of various types of literacy.

#### 11.3.1. Participation in continuing education

V4 countries vary significantly as regards participation in continuing education in the last 12 months. With the exception of Slovakia the participation is below the EU-25 average. Roughly 43% of the EU-25 population aged 25-64 are involved in some form of continuing education, while in Slovakia it is 60%. In Hungary it is only 12%, in the CR it is 29% and in Poland the figure is 30% (Eurostat, 2003). The rate of participation in continuing education is very often linked to the level of initial education acquired by an individual. A higher level of initial education stimulates higher participation in various forms of continuing education. This is associated particularly with personal initiative and flexibility, the scope and structure of educational opportunities and the existence of systemic mechanisms supporting participation in continuing education.

**Various forms of continuing education can complement or replace one another.** Formal education of adults in schools and non-formal courses tend to exclude one another. Only a small number of adults study at school and, at the same time, attend a course (of the total of 16.8% of people attending non-formal education courses in the EU-25 only 0.8% also study at school). On the other hand, various forms of self-study (informal education) are often accompanied by school education and, more often still, by non-formal courses. Nearly a half of the people who attend non-formal education courses are also involved in self-study (7.8% of the total 16.8% of people participating in non-formal education). The proportion of people who are involved in all forms of education is very low (only 0.6%).

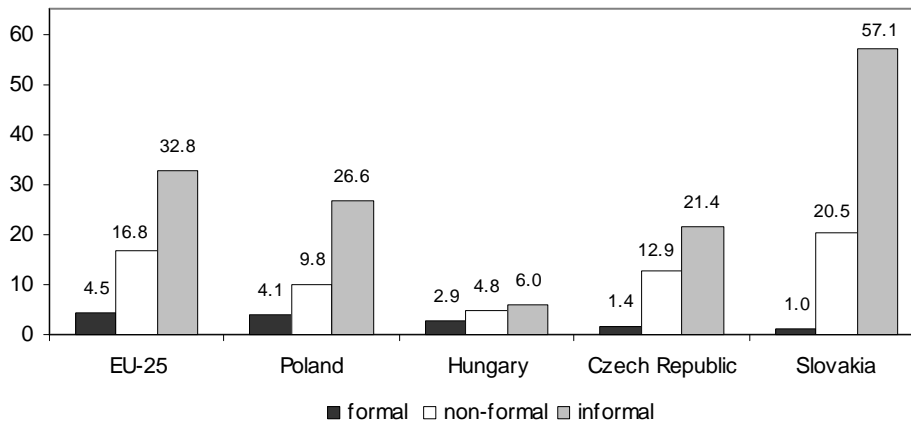
**Formal education** in schools is only rarely undertaken by adults. This form of education is preferred by younger people. National education systems do allow for the combination of employment and learning by means of various part-time forms of study, but the programmes last several years and involve relatively



severe time demands and, in some cases, reduction or elimination of income during studies. This is often unacceptable for people who face family obligations.

It is only in Poland that the rate of participation in formal education is comparable with the EU-25 average (4.1% vs. 4.5%). The other V4 countries' lagging behind shows that their schools and other educational institutions are not sufficiently responsive to the needs of adults, and also that their use of effective instruments supporting adult learners is limited (see figure 11.3).

**Figure 11.3. Participation of adults in life-long learning (%)**



Source: Eurostat (2003).

**Non-formal education** consists of participation in various courses, short-term training programmes or lectures both at the workplaces and outside it, either during the working hours or in free time. On average, the proportion of the population aged 25-64 participating in non-formal education in the EU-25 is 17%. Of V4 countries only Slovakia scored an above-average result (20.5%), while Hungary is far below the average (4.8%). In the CR the figure was 13%. Participation in non-formal education rises along with the level of formal education. The rate of participation in continuing education of lower skilled workers is positively influenced by massive investments in modernisation of manufacturing operations and by inflow of investment. Implementation of new technologies requires employers to provide training of their staff, including low-skilled workers. The largest gap in the rate of participation in non-formal education between people with the highest skills and those with the lowest skills was identified in Poland, where the low-skilled participants only accounted for 5% of those with tertiary qualifications. Slovakia scored the best result with this proportion reaching 16%. Countries with a higher cumulative participation in continuing education show a higher level of equity in access to this form of education.

One important part of non-formal education is **retraining**, which, in post-communist countries, began to develop along with employment services. Unsatisfied demand for various occupations on the part of employers combined with a high rate of unemployment provides considerable room for retraining. One problem is a lack of interest in retraining on the part of the unemployed, which grows with an increasing age, low qualifications, and the length of unemployment. V4 countries show a lower use of the retraining potential in comparison with developed EU countries. For example, in the Netherlands, Belgium and Sweden the rate of job seekers' participation in retraining is some 50%, whereas in Hungary, which ranks the best for this indicator, it is less than 20%. In Slovakia and the CR, only some 10% of the total number of job seekers undergoes retraining, and in Poland, it is only 2% (OECD, 2003). V4 countries differ not only in terms of attention devoted to retraining, but also in terms of unemployment rates. The least favourable ratio between the rate of unemployment and the proportion of individuals in retraining was identified in countries with a high rate of unemployment (Poland, Slovakia). Hungary showed the best ratio within V4 with the lowest rate of unemployment and the highest proportion of those retrained. It is clear that with lower rates of unemployment it is easier to achieve higher proportions of individuals in retraining (OECD, 2003).

**Informal education** covers a wide range of various forms of self-study from visiting training centres and attending expert lectures, through the internet, to following specialist programmes in the media. In the EU-25 average terms roughly one third of the adult population is involved in self-study, in Slovakia it is over one half. In the other V4 countries, the rate of self-study is below the EU-25 average. It is very low in Hungary (6%) (see figure 11.3). As self-study is largely implemented in free time, a low rate of participation can imply either preference for personal comfort or excessive workload (in terms of number of hours spent at work). For the information to be complete, it is necessary to mention a possible distortion of data, as the definition of informal education is very broad and it is up to the respondent which activities (including watching TV) he/she designates as self-study.

### 11.3.2. The knowledge and skills of the adult population

The key factors affecting a good position of an individual in the labour market and in civic life include not only the level of educational attainment and participation in continuing education, but also the knowledge and skills acquired. The knowledge and skills of an individual are, to a major degree, influenced by initial education. Initial education is expected to:

- a) lay the educational foundations which can be built on later in life,
- b) provide instruments for learning and understanding ways of acquiring and evaluating information, and
- c) provide incentives for lifelong learning.

If initial education is not followed upon by various forms of continuing education, the knowledge and skills acquired become outdated or even lost (in part or in full) if they are not used in civic or professional lives. Moreover, continuing education can redress the consequences of dropping out of the education system and/or a wrong career choice. Nevertheless, all surveys confirm that if an individual fails to acquire a positive attitude to education and learning during compulsory schooling, this drawback is very difficult to eliminate in adulthood.

The following analysis of knowledge and skills of the adult population is based on data obtained as part of the International Adult Literacy Survey (IALS) which covered the population aged 16-65. The level of literacy is expressed on a 0-500-point scale where a higher number of points corresponds to a higher literacy level. Slovakia did not take part in the survey. Although these figures are nearly 10 years old it may be assumed that there are no major changes in adult literacy during a ten-year period.

The best **average level of all three types of literacy** was identified in the CR, followed by Hungary and Poland (Slovakia did not participate in IALS). The position of the CR is not surprising, as it reflects the largest proportion of the population with at least secondary education. Surprising is the finding that the average level of literacy of adults in Hungary is higher than that in Poland, although a reverse ranking could be expected in view of the proportion of the population with at least secondary education. The reasons may be sought in participation in continuing education and in the quality of education. However, the Polish population showed a higher rate of participation in continuing education compared to Hungary (see chapter 11.3.1). The only indicators where Hungary scores better than Poland in this respect, are the quality of tertiary education and the proportion of people with tertiary qualifications.

Apart from the average level of adult literacy the distribution of the population in terms of individual literacy levels is also important. IALS works with five literacy levels, the fifth being the highest. A large proportion of the population with levels 4 and 5 is a clear advantage. This population is expected not only to satisfy the requirements of globalised economies, but also to urge the national economies towards higher competitiveness. A large proportion of people with levels 2 and 3 points to problems related to social integrity and inclusion.

A favourable comparative position of the CR in terms of the average ranking for various types of literacy (see table 11.5) is also reflected in its good comparative position in terms of the proportion of adults with higher literacy levels (see

figure 11.4). Very low proportions of the population with the highest literacy level send strong alarming signals to the relevant countries and should prompt a profound analysis of the causes. One of them may be the quality of education, but also **brain drain** into more developed countries. Talented people in Poland and Slovakia more often leave the country to take up opportunities elsewhere as compared to Hungary and the CR.<sup>1</sup> This expert view is, to a degree, confirmed by research into the willingness of the population to move to another EU country to take up a job (see chapter 11.2.3).

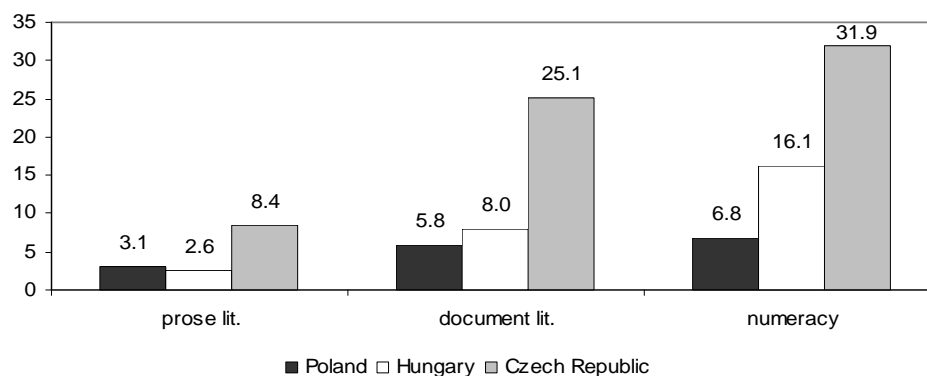
**Table 11.5. Average literacy level of adult population (15-64 year olds)**

Prose literacy		Document literacy		Numeracy	
country	points	country	points	country	points
Czech Rep.	269.4	Czech Rep.	282.9	Czech Rep.	298.1
Hungary	242.4	Hungary	249.0	Hungary	269.9
Poland	229.5	Poland	223.9	Poland	234.9

Notes: prose literacy – understanding and using information from texts such as editorials, newspaper articles, poems, and stories; document literacy – locating and using information found in common artifacts such as job applications, bus schedules, maps, payroll forms, indexes, and tables; numeracy – performing arithmetic operations.

Source: OECD (2000).

**Figure 11.4. Share of adult population at the two highest levels of literacy (1998, in %)**



Source: OECD, Statistics Canada (2000).

<sup>1</sup> In 2006, the brain drain figures published by the World Economic Forum in the Global Competitiveness Report 2006-2007 were as follows: Poland – 3.2, Slovakia – 3.2, CR – 3.8 and Hungary – 4.0. The scale used is from 1 to 7 where 1 means that it is common for talented people to leave the country to take up a job opportunity elsewhere, and 7 means that talented people normally stay in their country.

In all three countries, the population demonstrated the best average results in numeracy, followed by document and prose literacy. It is obvious that the problem shared by the countries' education systems is active work with a text, which constitutes a weakness as early as in initial education.

The competitiveness of enterprises and individuals is increasingly linked to the use of information and communication technologies (ICT). A certain degree of ICT literacy is becoming a prerequisite even for ordinary civic activities. This is why all advanced countries seek to create equal opportunities for acquisition of ICT skills. This involves the availability (and accessibility) of the relevant facilities, as well as respect for specific needs of various groups of population in terms of age, gender, social position, geographic location and physical/mental capacity.

The level of **computer or internet literacy** is derived from the accessibility and use of computers and the internet. The availability of these facilities in V4 countries is below the EU-25 average. Over a half of households in the EU-25, on average, have a computer (58%), while in V4 countries the figure ranges from 30% (the CR) to 47% (Slovakia). Internet connection is available on average in nearly a half of households in the EU-25 (48%), while in V4 countries it ranges from less than one fifth in the CR (19%) to less than one third of households (30% in Poland).

**Table 11.6. ICT facilities in households and use of internet by population (2005, %)**

	<b>Personal computer at home</b>	<b>Internet connection at home</b>	<b>Internet use by population</b>
EU25	58	48	51
Czech Republic	30	19	32
Hungary	42	22	37
Poland	40	30	35
Slovakia	47	23	50

Source: Eurostat (2005a).

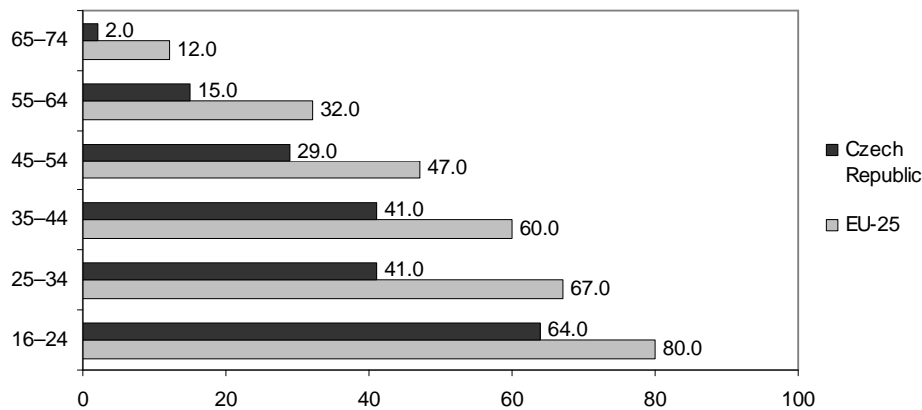
The main barrier to a wider availability of ICT facilities in households is the ratio between average family income and the cost of living on the one hand, and the cost of a PC and internet connection on the other hand. The importance attributed to this equipment also plays a certain role. Household facilities in the CR, for example, differ largely depending on the presence of children. In 2005, a PC was in 15% of households consisting of two adults, but it was in 56% of households made up by two adults and two children. As regards internet connection the figures were 10% and 35% respectively (CSU, 2005). The most frequent reasons why Czech households with a PC are not connected to the internet in-

clude the fee level (38% of households) and the possibility of using the internet elsewhere (35% of households).

**In V4 countries the population aged 16-74 use the Internet less as compared to the EU population.** In 2005 the average of 51% of respondents in the EU-25 used the internet during three months prior to the survey. In Slovakia it was 50%, although the level of ICT facilities in Slovak households is far below the EU-25 average (23% vs. 48%). This suggests that the Slovak population largely use access points other than home (school, jobs, libraries, internet cafes, etc.). The proportions of the population using the internet in the other V4 countries are deep below the EU-25 average, ranging from 32% in the CR to 37% in Hungary. This is the result of lower levels of ICT facilities in households, lower employment rates in occupations where the internet is used, a lower level of internet connection in schools, as well as less developed internet-based services.

The use of the internet by the population depend on age (see figure 11.5) and decreases as people grow older. This decline is more or less equally distributed among ten-year age groups in the EU-25, and it accelerates in the 55-64 and 64-74 age groups. The CR shows a relatively large difference between the youngest age group (16-24) and the next one (25-34). The latter also demonstrates the largest difference compared to the EU average.

**Figure 11.5. Internet use by age group (2005, in %)**



Note: Use in the three months preceding the interview.

Source: CSU (2005).

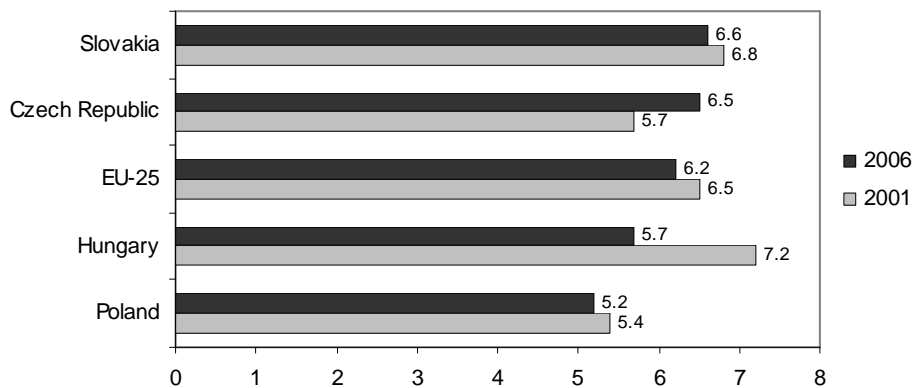
It is obvious that older people who could not acquire basic ICT skills in initial education face difficulties when finding ways of approaching ICT. In order to help them overcome fear of new technologies and to support computer literacy a

National Programme for Computer Literacy has been developed. Its implementation was initiated by the Ministry of Informatics in February 2003. Since 2003 nearly 132 thousand people have undergone courses within the scheme. This confirms large interest on the part of both the population and enterprises, as many participants were signed in by their employers. It may be assumed that these are mainly small enterprises with limited resources for staff development.

### 11.3.3. Flexibility

Flexibility is an increasingly important personal quality. In economic terms it is defined as an ability to adapt to changing labour market requirements. This ability is influenced by education and the individual's attitude, particularly his/her willingness to acquire new knowledge and skills. The International Institute for Management Development (IMD) in Switzerland publishes annually the level of flexibility of the population in its World Competitiveness Yearbook. Flexibility is evaluated via questionnaires in which local and foreign expert respond to the statement "Flexibility and adaptability of people are low/high when faced with new challenges". The level of flexibility is expressed on a ten-degree scale where more points mean a higher level of flexibility.

**Figure 11.6. Flexibility and adaptability of people in the economy (points)**



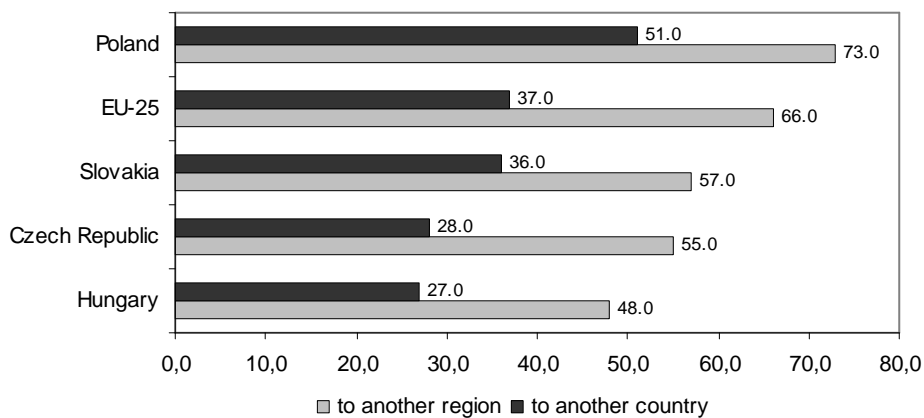
Source: IMD (2006).

In 2006, the level of flexibility was rated to be lower compared to the situation in 2001 both in the EU-25 on average, and in V4 countries, except the CR. The most severe decline occurred, according to experts, in Hungary (7.2 vs. 5.7), the most apparent improvement was seen in the Czech population (5.7 vs. 6.5). In 2006 the level of flexibility was above the EU-25 average in the CR and in Slo-

vakia. Poland and Hungary remained below the average. Flexibility is a feature, where it is impossible to expect large year-on-year changes. It is more likely to develop gradually or remain stable. The indicators identified via questionnaires are very sensitive to the overall economic situation in the given country. If there is a positive economic development or expectations, the evaluation tends to be more optimistic. In terms of international comparison, these varying levels of optimism among respondents can be reflected in the results.

In developed countries, occupational flexibility is supported by retraining, guidance and assisting individuals in finding appropriate employment. Occupational flexibility can be replaced by geographic mobility, provided that the individual finds a job in line with his/her qualification in a different region. Availability of information is a prerequisite for occupational flexibility and geographic mobility. The willingness to show flexibility in terms of an occupation or location is, to a large degree, undermined by too dense social net which does not force individuals to find a new job quickly and to engage themselves financially or mentally to resolve their situation in this respect. A special survey conducted in 2005 aimed to ascertain the views of the EU population about geographic and occupational mobility. The first results of the survey (see figure 11.7) show that the V4 population are not too inclined to move in the case of unemployment, with the exception of Poles. The average of 66% of the EU-25 respondents was willing to leave their region to get a new job. In Poland, it was 73%, but only 27% in Hungary and 28% in the CR. The Slovak population is the closest to the European average.

**Figure 11.7. Share of population willing to move to get a job in the event of unemployment (2005, %)**



Source: European Commission (2006).



The willingness to move abroad is lower in all countries as compared to intrastate migration. A mere 37% of the EU-25 respondents expressed their willingness to move to another EU country if they were unemployed, which is about a half of those willing to move within their country. The proportions of Hungarians and Czechs willing to move abroad were even lower (27% and 28% respectively). This percentage was the highest in Poland (51%). Insufficient language skills are seen as the biggest obstacle to international mobility (50% of the respondents). Problems related to adaptation to a different environment were mentioned by 20% of the respondents. Relatively fewer people (15%) see a barrier to migration in access to welfare services, and less than 10% see a problem in recognition of their qualification and diploma, or acquisition of a work permit. Obtaining a work permit is largely seen as a problem in new member states in view of the restrictive measures adopted by some old member countries in relation to a free movement of the workforce.

The low level of occupational mobility in the EU-25 is demonstrated by the fact that as many as 25% of respondents have never changed an employer. This proportion changes significantly depending on age. Not many Europeans consider a change of an employer in the future – 54% of the respondents do not intend to change a job in the upcoming five years. A decisive factor for retaining the existing job is job satisfaction. According to the results of the survey, employer change plays a major part in acquisition of new knowledge and skills. A quarter of those who changed an employer had to acquire new knowledge and skills, but this was only true of 15% of those who stayed with the same employer. Employer change is not always associated with a higher level of knowledge and skills. The percentage of those who had to enhance their knowledge and skills was the same for people who changed an employer and for those who did not (43%). Individuals, who remain too long with one employer, have the tiniest chance of improving their knowledge and skills. Nearly a half of those who have never changed an employer (46%) apply the same knowledge and skills as when they entered the job. The survey has shown that occupational mobility is associated with changes in knowledge and skills acquired so far, and these changes further promote mobility. Conversely, remaining in one job for a long time results in stagnation of knowledge and skills, unless the individual progresses on the corporate ladder towards more demanding job positions.

#### **11.4. Conclusions**

The final evaluation of the quality of human resources is approached in two ways. The first approach is based on comparing available indicators for individual countries with the EU-25 average. It has been identified which countries in

which cases exceed the European average. The second approach intends to compare the overall quality of human resources among V4 countries. Based on the levels achieved for various indicators the countries are rated on a 1-4 scale. The country with the most favourable figure received 1 point; the worst ranking was 4 points. The overall quality of human resources was expressed by a sum of point scores. It is clear that the number of points in various countries is influenced by the structure of indicators. This is why considerable attention was paid to the choice of indicators in order to make this method, which is subjective to a degree, more objective.

The set of indicators used as part of the second approach consists of five indicators, each of them mapping a certain qualitative feature of human resources. The indicator described as “the proportion of the population with at least secondary education” is understood to be an indirect indicator of average knowledge and skills of the population. It may be assumed that a higher proportion of people with secondary education is linked to a higher average level of knowledge and skills. The indicator described as “the quality of tertiary education” indicates the level of top knowledge and skills in the population, which is expected to be the most beneficial in terms of the development of a knowledge economy. “Participation in lifelong learning” suggests the extent to which the population expands and enhances the knowledge and skills acquired in initial education, which, due to the accelerating technological advancement, become outdated more quickly than in the past. The indicator of “internet usage of the population” maps the capacity of the population to use ICT, which permeates all areas of the economy and society. In terms of the economic performance and employability of the population, the capacity and willingness to adapt to new labour market requirements play an increasingly important role. This component of the quality of human resources is expressed by means of the indicator of “the flexibility of the population”.

The results of the human resources quality comparison by means of nine selected characteristics<sup>2</sup> **in V4 countries and the EU-25 average** are not favourable for the V4 countries. One comparative advantage shared by all V4 countries

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<sup>2</sup> Those indicators, which were available for all V4 and EU-25 countries were selected. They are the following:

- » proportion of the population aged 25-64 with at least secondary education (2005);
- » proportion of the population aged 25-64 with tertiary education (2005);
- » quality of tertiary education (2006);
- » educational mobility (2005);
- » total expenditure on educational institutions as proportion of GDP (2003);
- » participation of adults in life-long learning (2003);
- » internet usage by population (2005);
- » flexibility (2006);
- » share of population willing to move to get a job.

is the above-average proportion of the population with at least secondary education. The proportions of people with tertiary qualifications are below the EU-25 average in all V4 countries. None of the Visegrad countries achieved the average level of internet literacy. As regards the remaining indicators, mostly only one or two countries exceed the EU-25 average. In terms of comparison with the EU-25, average Poland ranked the best with above-average results in three cases: educational mobility, expenditure on education as a proportion of GDP, and willingness of the population to move to get a job in the case of unemployment. The Czech Republic and Slovakia achieved higher than average figures for two indicators. In the CR it was the quality of tertiary education and flexibility of the population, in Slovakia it was participation in continuing education and flexibility of the population. The only indicator where Hungary was above the EU-25 average was expenditure on education as a proportion of GDP.

**Table 11.7. Quality of human resources**

	A		B		C		D		E		Total
	V	R	V	R	V	R	V	R	V	R	R
Czech Rep.	90.0	1	6.1	1	29	3	32	4	6.5	2	11
Hungary	76.4	4	5.5	2	12	4	37	2	5.7	3	15
Poland	84.8	3	4.8	3	30	2	35	3	5.2	4	15
Slovakia	87.9	2	4.0	4	60	1	50	1	6.6	1	9

Notes: A – share of population with at least secondary education in 2005 (ISCED 3-6) (%),

B – quality of tertiary education in 2006 (points),

C – participation of adults in life-long learning in 2003 (%),

D – internet usage in 2005 (%),

E – flexibility and adaptability of people in economy in 2006 (points),

V – data,

R – rank.

The comparison of V4 countries in terms of **the overall quality of human resources** on the basis of five selected characteristics (see above) shows that Slovakia has the best comparative position. The Czech Republic ranks second, followed by Hungary and Poland with the same score. The strengths of the Slovak population include participation in lifelong learning, internet literacy, and flexibility, whereas the quality of tertiary education is a disadvantage. The CR scores better than the other countries in terms of the proportion of the population with at least secondary education and the quality of tertiary education, but it lag behind for internet literacy. The population in Hungary and in Poland did not get the highest ranking for any of the indicators. The major disadvantage of the Polish population is their level of flexibility, while in Hungary it is the proportion of

the population with at least secondary education and participation in lifelong learning.

It is apparent that the quality of human resources is an important aspect considered by investors deciding to place investments with a high value added. If V4 economies want to attract this type of investment and not only investment demanding quantity and not quality of human resources, they must pay more attention to supporting the qualitative growth of their workforce.

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