

HUMAN CAPITAL AS THE PROMOTING FACTOR OF REGIONAL COMPETITIVENESS IN LATVIA

Ilze Judrupa, Maija Šenfelde
Riga Technical University, Riga, Latvia

Abstract

The competitiveness of regions in Latvia is affected by various factors – inside and outside factors. One of the most important factors is human capital. The human capital of the country is the average amount of inhabitants' knowledge, talent and skills, which is multiplied by number of economically active inhabitants. In the "Latvian sustainable development strategy till 2030" one of the goals is to keep the existing value of human capital and to increase its productivity till the average level of EU by development of skills which promote innovation and creativity, flexibility of job market. Processes, that influence the value of human capital in regions, and in such way the competitiveness of regions, are essential demographical changes in the future – population in Latvia and its regions are aging and the number of inhabitants decreases. Use of HCI can help to find out those areas, in which there are the biggest problems and it will be easier to find the necessary solvings to achieve our goals.

Key words: Human capital, competitiveness, region, depopulation, human capital index.

The competitiveness of regions in Latvia is affected by various factors – inside and outside factors. One of the most important factors is human capital. Human capital has critical role in the growth of every country. Competitiveness and prosperity of industrial society were determined by capital goods, but in the knowledge society the main source of prosperity and development is human capital.

One of the founders of human capital concept – Gary Becker said: "New technological breakthroughs can not give benefit to countries, if there are few skill workers, which will know how to use them, in those countries. Economical growth is highly dependent on synergy between new knowledge and human capital. So increase of education and training has spent the technological progress in all countries that are reached important economical growth" [1].

In the centre of definitions of human capital most often are education, skills, knowledge of individuals that increase their economical productivity, but concept of human capital is broader.

One of the definitions of human capital, which is given in the "Latvian sustainable development strategy till 2030" is: "The human capital of the country is the average amount of inhabitants' knowledge, talent and skills, which is multiplied by number of economically active inhabitants. The value of human capital can be characterized by the basis of knowledge, talent and skills, their use and productivity. Investments in human capital are education, health care, qualification and other activities that make

people more economically productive and economically rich" [2].

But it is possible to separate specific and general aspects of human capital (Fig. 1).

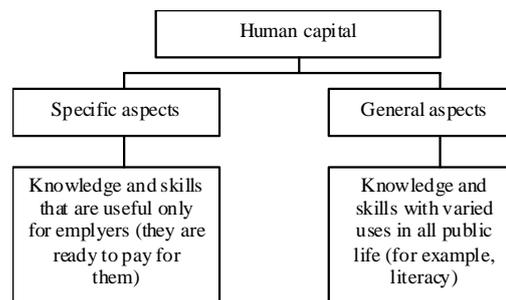


Fig. 1. Aspects of human capital [made by authors after 2]

In the context of human development both aspects that are shown in Figure 1 are equally important. To evaluate human capital it is necessary to identify those skills and abilities that are required in the definite conditions.

In the "Latvian sustainable development strategy till 2030" one of the goals is to keep the existing value of human capital and to increase its productivity till the average level of EU by development of skills which promote innovation and creativity, flexibility of job market.

The population of Latvia continues to decrease and the society more and more rapidly is aging. During one month Latvia loses 700-1000 people and the forecasts are that in 2030 people over 80 years will be more than pre-school children. Half of total population will be over 45 years [3].

Challenge of the sustainable development is to find a way how to increase labor productivity and provide quality of life in the conditions, when aging of population, emigration, demographic burden increases. At the same time number of pupils and students decreases.

To achieve economic growth and development of society the main ideas in the national strategic documents are concerned directly with development of human resources. The existing processes in Latvia will decrease the value of our main resource – human capital.

To evaluate two aspects of human capital – health and education - at the global level it is possible to use different indexes. One of the most popular indexes is the **Global competitiveness index (GCI)**, which is published in “The Global Competitiveness report 2010-2011” by World Economic Forum. There are 12 pillars of competitiveness in this index (Fig. 2).

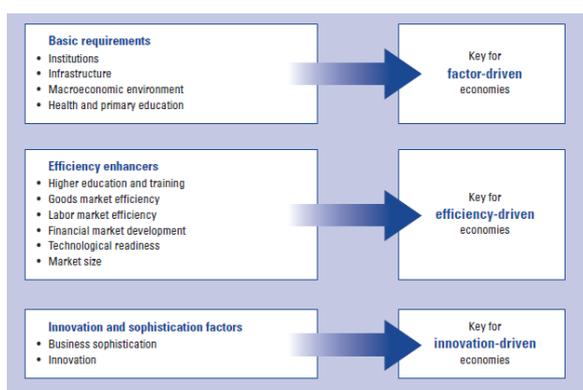


Fig. 2. The 12 pillars of competitiveness [4]

From Figure 2 we can see, that there are 3 very important pillars that characterize human capital. They are health and primary education, higher education and training and labor market efficiency. They are key factors for factor-driven or efficiency-driven economies. To calculate the Global competitiveness index, countries are divided into 3 large groups and each of those groups has different relative weights that are shown in the Table 1.

Table 1. Relative weights of GCI [4]

Factor groups	Stage of development	Factor - driven economies	Efficiency-driven economies	Innovation-driven economies
	1	2	3	4
Basic requirements		60%	40%	20%

(continued)

	1	2	3	4
Efficiency enhancers		35%	50%	50%
Innovation and sophistication factors		5%	10%	30%

From the Table 1 we can see that for factor-driven economies most important are basic requirements, but for innovation-driven economies most important will be innovation factors.

To determine to which economy belongs each country, such indicator as GDP per capita is used (Tab.2).

Table 2. Income thresholds for establishing stages of development [4]

Stage of development	GDP per capita (in US\$)
Stage 1: Factor driven	< 2,000
Transition from stage 1 to stage 2	2,000–3,000
Stage 2: Efficiency driven	3,000–9,000
Transition from stage 2 to stage 3	9,000–17,000
Stage 3: Innovation driven	> 17,000

Using this method, Latvia in 2010 is in the transition from stage 2 to stage 3. In “The Global Competitiveness report 2010-2011” the index is calculated for 139 countries and Latvia takes the 70th place (GCI = 4,14; the worst result can be 1, the best result can be 7). Among the EU countries Latvia is only in the 25th place (Fig. 3).

In the context of human resources it is necessary to analyze the performance of Latvia in 3 pillars that characterize development of human resources in the country. The performance of Latvia in all 12 pillars is shown in Figure 4.

From Figure 4 it is possible to conclude that the best situation in Latvia is directly in the pillar, which is primary concerned with human capital – health and primary education (Index = 5,9; 55th place). Also in other two pillars the results for Latvia are considerably good, Index of Higher education and training is 4,8 (35th place) and Index of Labor market efficiency is 4,6 (52nd place). And also we can see that from all 12 pillars in these 3 Latvia has the highest performance. But it does not mean that the situation is satisfactory, it is only considerably better than in other states and positions. Other popular international index that can be used to characterize human capital is **Human Development Index (HDI)** published in United Nations Development Pro-

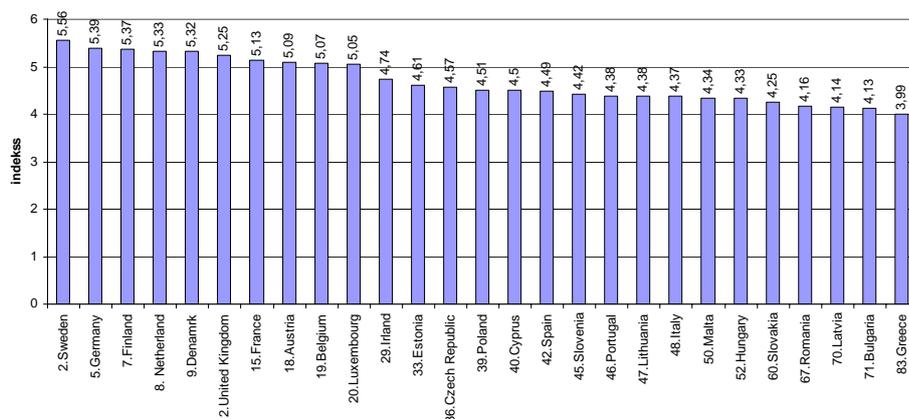


Fig. 3. GCI in the EU countries, 2010 [made by authors after 4]

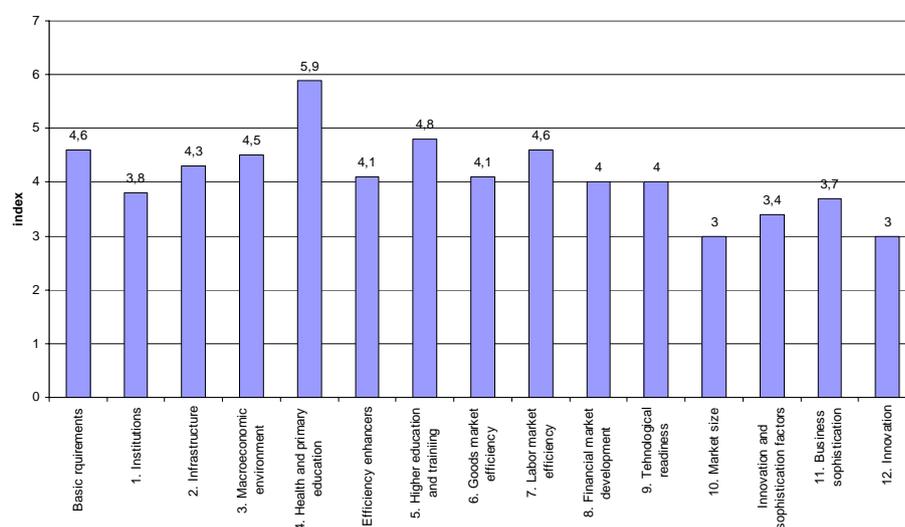


Fig. 4. GCI 12 pillars in Latvia, 2010 [made by authors after 4]

gramme’s (UNDP) „Human Development Report”. The dimensions that are covered by this index is shown in the Figure 5.

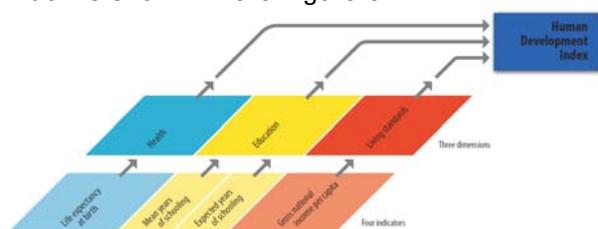


Fig.5. Dimensions of Human Development Index [5]

From Figure 5 we can see that there are also 2 important dimensions of human capital in HDI – health and education. In the “Human development report 2010” 169 countries are included. The best value of index is 1, but the worst value of HDI can be 0. Latvia is in the 48th place (HDI=0,769), and in Figure 6 it is possible

to see, that among the EU countries the situation in Latvia is considerably bad, Latvia takes only 25th place.

From Figure 6 we can see that the best situation with human capital is in Ireland, but Latvia together with Romania and Bulgaria are in the last 3 places.

There is specific regional dimension of depopulation and aging in Latvia. If the regional policy of Latvia will not concentrate on the problem of unequal regional development, then in all Latvia’s regions, except Riga region, the amount of population will decrease. The more far from the capital of Latvia are region, the older are inhabitants. The aging of society is concerned also with decrease of productivity and changes in the structure of labor force.

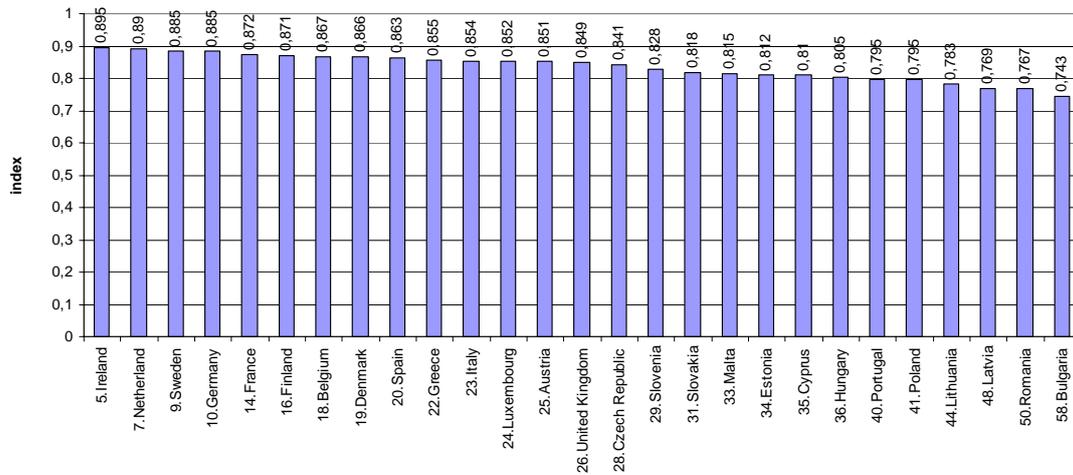


Fig. 6. HDI in the EU countries, 2010 [made by authors after 5]

To evaluate human capital in the regions of Latvia Index of Human Capital (*HCI*) was calculated. 3 indexes of human capital were worked out – the first shows the performance of the region among other regions in definite year (*HCI_R*), the second shows the performance of one region during definite time period (*HCI_T*) and the third index combines the first and the second indexes (*HCI*). Data that are used to calculate *HCI_R* and *HCI_T* are obviously seen in Figure 7.

	Resident population				
	2002	2003	2004	2005	
Riga region	747 157	739 232	735 241	731 762	<i>HCI_T</i>
Pieriga region	359 286	359 566	363 283	366 075	
Vidzeme region	252 079	250 984	248 204	245 426	<i>HCI_R</i>
Kurzeme region	317 062	315 555	313 334	310 673	
Zemgale region	292 049	291 326	289 990	288 153	
Latgale region	378 135	374 817	369 151	364 345	

Fig.7. Data used to calculate *HCI_R* and *HCI_T* [made by authors]

The *HCI* can take values from 1 (the worst result) to 10 (the best result) and is calculated from *HCI_R* and *HCI_T* using formula 1:

$$HCI = \sqrt{HCI_R \cdot HCI_T} \quad (1)$$

where:

- HCI* – Index of Human Capital.
- HCI_R* – Index of Human Capital, that shows the performance of the region among other regions in definite year.
- HCI_T* – Index of Human Capital, that shows the performance of the region during definite time period.

HCI_R and *HCI_T* are calculated using formula 2:

$$HCI_R(HCI_T) = \frac{1}{N} \left(\left(9 \cdot \frac{f_1 - f_{\min_1}}{f_{\max_1} - f_{\min_1}} + 1 \right) + \left(9 \cdot \frac{f_2 - f_{\min_2}}{f_{\max_2} - f_{\min_2}} + 1 \right) + \dots + \left(9 \cdot \frac{f_n - f_{\min_n}}{f_{\max_n} - f_{\min_n}} + 1 \right) \right) \quad (2)$$

where:

- $f_1 \dots f_n$ - actual values of the indicators of the definite factor;
- f_{\min}, f_{\max} - minimal and maximal values of the indicators of the definite factor;
- N – number of the indicators of the definite factor.

To calculate *HCI* for regions of Latvia following indicators were selected:

- resident population;
- share of resident population under working age in total population, %;
- share of resident population of working age in total population, %;
- share of resident population over working age in total population, %;
- GDP per 1 employee, LVL.

Because of the lack of statistics at regional level, it was not possible to use all necessary indicators that characterise human capital, for example, level of education or health statistics. The second problem is time period – it was possible to calculate *HCI* only for time period from 2002 till 2008.

HCI was calculated for statistical regions of Latvia. There are 6 statistical regions in Latvia.

HCI_R for statistical regions of Latvia is shown in the Figure 8.

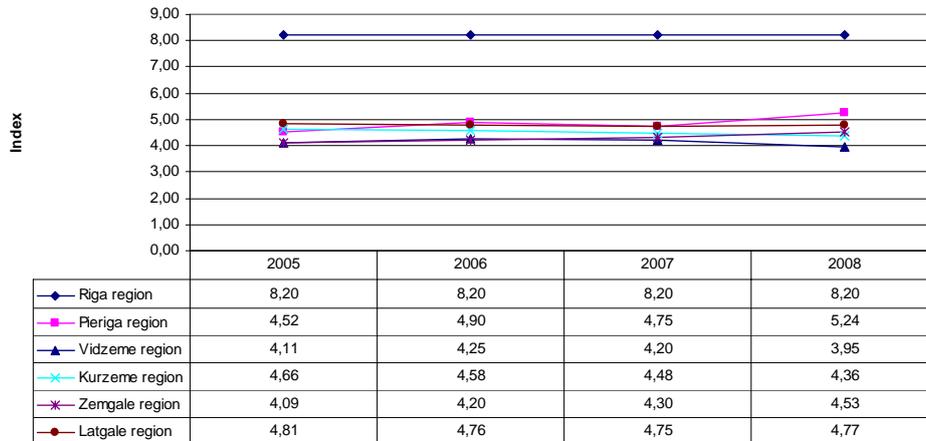


Fig. 8. HCIR for statistical regions of Latvia [author's calculations]

From Figure 8 we can conclude that, if we compare performance of regions in definite years, then the most competitive region in human capital is Riga region, because it has the best performance in all indicators, except share of resident population under working age in total population. In this indicator Riga region's per-

formance is the worst among other statistical regions of Latvia. There is also big difference between Riga region, ($HCIR=8,20$ in 2008) and other regions ($HCIR$ is about 4,5 in 2008).

$HCIT$ for statistical regions is shown in Figure 9.

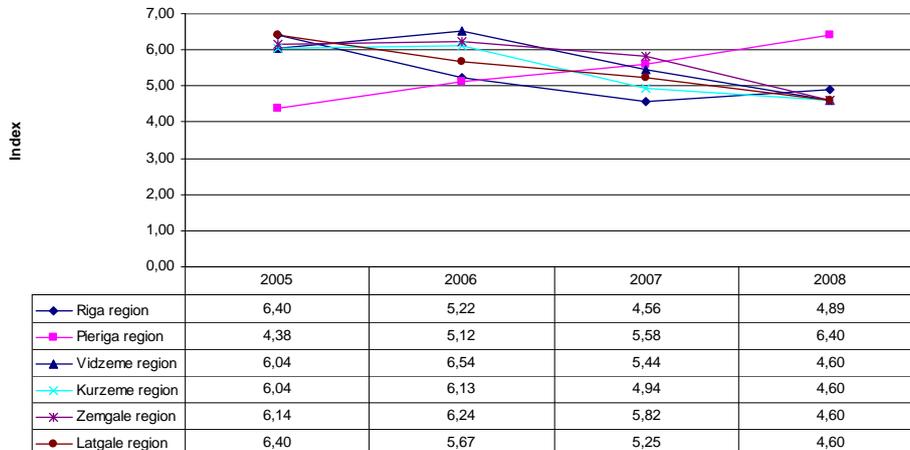


Fig. 9. HCIT for statistical regions of Latvia [author's calculations]

This index shows how the situation in regions was changed during time period 2002-2008. From Figure 9 we can see that in all statistical regions, except Pieriga region, situation with human capital became worst, because $HCIT$ decreased. Only Pieriga region shows increase of HDI_T due to positive trend of such indicators like resident population and GDP per 1 employee.

Total HC in statistical regions of Latvia is shown in Figure 10.

From Figure 10 we can see that the most competitive region in the sphere of human capital is Riga region, although it has the negative trend and during 2007, 2008 the competitiveness of Riga region has decreased. Riga region has this high level of HC , only because it is in the first place among other statistical regions of Latvia.

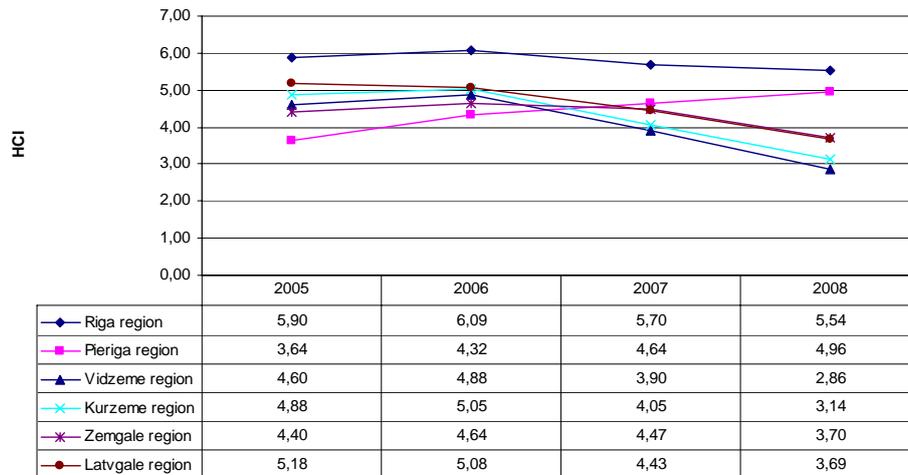


Fig. 10. HCI for statistical regions of Latvia [author's calculations]

The only region, which has the positive trend of *HCI* is Pierīga region, because more and more people want to live and work in this region. It is located relatively near the capital of Latvia – Riga and is attractive place for young families to live.

It is necessary to analyse deeper the situation in the sphere of human capital in Latvian statistical regions, because it influences the level of competitiveness of the regions. It is necessary to find out the ways, how to improve the situation. Use of the *HCI* can help to find out those areas, in which there are the biggest problems and it will be easier to find the necessary solvings to achieve our goals.

This work has been supported by the European Social Fund within the project "Support for the imple-

mentation of doctoral studies at Riga Technical University".

References

1. *Latvija. Pārskats par tautas attīstību.* http://petnieciba.lv/materiali/publik/2007_Latvija_Parskats_par_tautas_attistibu_2006_2007_Cilvekkapitals_mans_zelts_ir_mana_tauta.pdf.
2. *Latvijas ilgtspējīgas attīstības stratēģija līdz 2030. gadam* http://www.latvija2030.lv/upload/latvija2030_10062010.pdf.
3. *Cilvēkkapitāls un izglītība.* http://www.latvija2030.lv/upload/diskusijulapas_cilvekkapitals.pdf.
4. *The Global Competitiveness Report 2010-2011.* http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2010-11.pdf.
5. *Human Development report 2010.* http://hdr.undp.org/en/media/HDR_2010_EN_Complete.pdf.
6. *CSB data base.* <http://www.csb.gov.lv>.