Introduction

Developing countries are on the transition way to a knowledge-based economy. One of the knowledge-economy aspects is education that is under the Human Development (HD) observation. The Baltic States’ population education level, circumstances and attainability is a motive for young people’s migration from rural to urban areas. One of the issues of this phenomenon is a risk of deficit of rural profession specialists. Lack of local rural specialists can be a cause for a series of other different issues connected with rural regions’ development i.e.
that might be a reason of the development’s slow tempos. Therefore, it is important to explore the situation deeper to develop new hypotheses that propose effective solutions.

The aim of the research is to evaluate education’s role in Human Development in terms of transition process to a knowledge economy in the Baltic States for the last years based on available data focusing on rural areas of the countries. The main tasks of the research are to explore theoretical background on the topic and HD education’s path mainly from statistical data perspective on the Baltic States example for the last years. The authors also set as a task to briefly explore the situation of the HD from the education and employment perspectives in the rural territories of the Baltic States.

The theoretical framework of the research helps in the definition of main terms (HD and knowledge-based economy); appropriate HD indexes (HDI) and explore possibilities, advantages and disadvantages of the existing knowledge assessment methodology (KAM). The authors also provide conclusions of previous studies on other European countries’ young educated labour force migration from rural to urban territories.

The authors also interpret Knowledge Index, Knowledge Economy Index and HD Index data connected with education. In addition, the authors have observed and interpreted the statistical data on rural and urban population, its migration and employment.

Agriculture and rural regions’ development might be stagnated by several external environment factors. One of them is connected to the youngest generation striving for the education and knowledge that they can mostly receive in the country’s largest cities. However, there are regions in the Baltic States, where the proportion of young people from the population is high; however, they are NEETs (young people, who are Not in Education, Employment, or Training). This problem is under the attention of the governments and European Institutions as well as the International Labour Organisation (Eurofound, 2012).

In 2014, the rural population’s proportion out of the total country’s population was 32.4% in Estonia, 32.6% in Latvia and 33.5% in Lithuania. Since 2005, these indicators have increased in each country, i.e. up to 0.1% in Lithuania, up to 0.6% in Latvia and up to 1.1% in Estonia (The Wold Bank, 2014); however, it is important to make the correct conclusions. Most probably, it does not mean that people prefer to live in the rural areas now. It is more likely that nine years ago natural population growth was better in the rural areas than in urban. The increase can be connected with slight development of the rural areas or emigration of urban population, or any other reason.

The authors apply exploratory research design. The main research methods applied are literature review, synthesis, secondary data interpretation, comparison.

Concerning rural development, this study observes a new path from the human development perspective. Human development is a core element for developing any territory. Focus on territorial development means investment in the development of its inhabitants.
Information sources used within the research are scientific journals’ articles, official statistics and governmental or institutional reports on the topic.

The research topic is a subject to some limitations. For the theoretical background exploration, the authors chose the most recent published sources as well as those that present origin of the observed topics. The authors observe only one component of the HD (education) and Knowledge economy pillar (Education and Training). Statistical data evaluable for all three countries do not represent the situation for the last years. To compare the situation in all three countries the authors took the last available data from each country. Some KAM data provided are for 2009, the year economic crisis began in the Baltic States; thus, it is impossible to make any adequate conclusions based on the data or indexes.

Research results and discussion

Rural population in the Baltic States

Human Development is connected to human education, i.e. intellectual development that means that one of the goals of the HD is to develop human capital. “Human capital is important for economic development” (Fratesi U., 2014) as educated people bring a value to the economy of the country. The more educated people a country has, the more developed its economy is. Economy in the Baltic States, however, is mostly urban based, i.e. in the Baltic States Gross Domestic Product’s (GDP) structure; agriculture has the smallest weight and is less than 5 per cent (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Sector</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>3.90</td>
<td>4.90</td>
<td>3.70</td>
</tr>
<tr>
<td>Industry</td>
<td>30.00</td>
<td>25.70</td>
<td>28.30</td>
</tr>
<tr>
<td>Services</td>
<td>66.20</td>
<td>69.40</td>
<td>68.00</td>
</tr>
</tbody>
</table>

Source: The World Factbook, 2013

In terms of employment, the data shows that rural areas provide jobs. Most probably, they are too specific and not that various as on the urban areas labour market. Since 2005 to 2012, employment in agriculture is up to 5.20% of total employment in Estonia. Employment in agriculture in Latvia and Lithuania has decreased during one year for 2.00% in Latvia and for 2.50% in Lithuania since 2007 to 2008, the year of economic crisis start. Since that time until 2012, it has increased by 1.00% in case of Lithuania and for 0.50% in case of Latvia. However, generally Latvia and Lithuania employ biggest range of specialists in agriculture as of the total employed people in the countries than Estonia (The World Bank, 2014a).

It could illustrate the tendency of the labour market after the crisis. The economies of the Baltic States especially Latvian and Lithuanian become more concentrated on the service and
industrial sector and knowledge-based economy in general. Development of the rural areas in terms of economy might be less attractive now as it has the smallest share in the economy.

People, who live in the rural areas in the Baltic States, might also tend to be more attractive by urban territories, because of the various job opportunities and education opportunities. In case of Sweden from 2000 to 2009 during the early labour market career university graduates were motivated to move to urban regions by faster wage growth and more frequently job switching opportunities (Ahlin L. et al., 2014). To be more developed rural people might migrate within the country from rural to urban areas just striving for the personal development. HD might also have transition from the rural to urban areas and as the result, rural areas might lose the sustainable employment bases. Therefore, the cooperation of the rural and urban areas might be an opportunity to impact rural development.

From 1990, rural population of the Baltic States has a tendency to grow as a part of the total countries population (Fig. 1). To ensure human development of the rural population it is important to pay attention on several human development aspects that are discussed in the sub-section 3. The authors propose to focus specially on the education as lack of the education possibilities can cause many difficulties and does not secure the rural human development. Some of the issues can be the growth of NEETs and stagnation of the rural development in general.

![Graph showing rural population from 1990 to 2013 in the Baltic States](source: The World Bank, 2014b)

**Fig. 1. The Baltic States Rural population from 1990 to 2013 (% of total population)**

Knowledge economy brings challenges for the rural development bearing in mind the real situation in the rural areas. The authors compare the Baltic States knowledge economy indicators to explore the situation further.

**Knowledge economy and Knowledge Assessment Methodology**

Knowledge is a part of the Human Capital (Becker G. S., 1993). Simply discussing knowledge-based economy it is possible to consider that knowledge economy is a type of
economy that is based on human capital and particularly on the possibility and ability of population’s knowledge transformation into the economic value.

“P. F. Drucker (1993) was the first who enriched the management that there is a new kind of capital and called it to the knowledge capital” (Kucharcikova A., 2011). He also outlined that the world is fast moving to a knowledge-based economy (Drucker, 1999). People are striving to be more knowledgeable to develop their knowledge or human capital that is used mostly by industrial and service organisations to produce value for the market. W. W. Powell and K. Snellman (2004) highlight that knowledge economy presumes “knowledge intensive activities that contribute to an accelerated pace of technological and scientific advance as well as equally rapid obsolescence” (Voronchuk I. and Starineca O., 2014).

“The early 21st century has become a century of the knowledge society, where knowledge is (...) an essential factor of individual wellbeing. One of the components of the knowledge society is the knowledge economy” (Lapina I. et al., 2014). One of the knowledge-based economy element is education (White et al., 2012; The World Bank, 2011). The World Bank developed the Knowledge Assessment Methodology (KAM) for knowledge economy evaluation. KAM presumes knowledge indexes application. There are two main knowledge indexes: the Knowledge Index (KI) that “measures a country’s ability to generate, adopt and diffuse knowledge” and the Knowledge Economy Index (KEI) that “takes into account whether the environment is conducive for knowledge to be used effectively for economic development”. KI is based on Education Index, Innovation Index, Information and Communication Technology (ICT) Index, when KEI additionally takes in the account also the Economics and Institutional

Table 2

<table>
<thead>
<tr>
<th>Number</th>
<th>Index</th>
<th>Estonia</th>
<th>Latvia</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge Economy Index (Average of 3,4,5,6)</td>
<td>7.09</td>
<td>5.22</td>
<td>5.95</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge Index (Average of 4,5,6)</td>
<td>6.84</td>
<td>4.69</td>
<td>5.73</td>
</tr>
<tr>
<td>3</td>
<td>Economic Incentive and Institutional Regime</td>
<td>7.83</td>
<td>6.81</td>
<td>6.59</td>
</tr>
<tr>
<td>4</td>
<td>Education</td>
<td>7.29</td>
<td>5.66</td>
<td>7.57</td>
</tr>
<tr>
<td>5</td>
<td>Innovation</td>
<td>5.85</td>
<td>3.55</td>
<td>3.97</td>
</tr>
<tr>
<td>6</td>
<td>ICT</td>
<td>7.39</td>
<td>4.86</td>
<td>5.65</td>
</tr>
</tbody>
</table>

Source: The World Bank, 2012

Regime Index. The Education Index mainly takes into account three variables: average years of schooling, secondary enrolment and tertiary enrolment (The World Bank, 2011a).
In general, KAM is useful as the interactive and accessible for each Internet user tool helps display data on more than 140 countries in six different modes. KAM has also some disadvantages. It does not state clear the year of the used data, e.g. it states ‘most recent’, the last KAM version was for the year 2012, the validity of the data used is doubtful (some data used are for the crisis and recovery years that are not representative).

Comparing the Baltic States with European and Central Asian countries using KAM it is possible to consider that Estonia and Lithuania have greater potential to successful transition to the knowledge-based economy based on the KI (Table 2).

Lithuania has the highest Education Index according to KAM 2012 (Table 2). Among 144 countries Lithuania is the 14th in the rating by Education Index, Estonia is the 17th and Latvia is only the 27th (The World Bank, 2012a).

One of the variables taken into account calculating Education Index by KAM is tertiary enrolment. “Almost all the contributions on human capital and migration have focused on individuals who recently completed a tertiary education degree” (Faggian A. and Franklin R. S., 2014). Comparing the Baltic States by the percentage of tertiary enrolments particularly in agriculture in 2012, it is clear that Estonia again has a leading position (2.25% of the total tertiary enrolments), when Latvian indicator is the lowest one (1.34%) and is quite twice less than in Lithuania (2.17%) and Estonia. Based on data on the percentage of population age above 15 with incomplete and completed tertiary schooling in 2010 Estonia again has a leading position (30.40%), Lithuania is the second (25.44%) and Latvia is the last among the Baltic States with the indicator of 20.03% (The World Bank, 2014c).

Comparing the Baltic States Education Index, the authors also checked the data calculated towards the HD approach.

**Human Development and Human Development indexes**

Human Development approach presumes ‘people’s political empowerment’. HD is a concept used developing the Human Development Reports (HDR). HDRs are “published annually for the United Nations Development Programme from 1990”. As a base Amartya Sen’s capability approach is used in the analyses. The essence of the HD approach is “the concept of well-being” that can be used as a tool for public policy definition. Nowadays HDRs are focused on “people’s political empowerment” (Fukuda-Parr S., 2003).

HD emphasises that people are valuable for society and nation (United Nations Development..., 2014); it is important to think about their development, because more developed person brings additional value for the society and affect its development. Developing people, is enriched their human capital. “Human capital is an unusual production factor because it cannot be transferred easily without transferring people themselves. It is embedded in people’s capabilities, tacit knowledge, ability to decode explicit knowledge, wider social networks” (Fratesi U., 2014) etc.
HD indicators show the level of HD. There are several indicators. Some authors might mention such HD indicators as GDP per capita, adult literacy rate, life expectancy, under five mortality etc. (Shahani L. et al., 2009). Classically as HD main indicator, is used the Human Development Index. HDI components are Health Index, Income Index and Education Index that in this case is calculated “using mean years of schooling and expected years of schooling” (United Nations Development..., 2014).

Comparing the Baltic States HDI in 2013, the authors could outline that all countries are at the very high human development group of 50 countries. However, the best result has Estonia, Estonia has the 33rd place in the rating with HDI 0.840 (where 1.000 is a maximum rate), Lithuania has the 35th place (HDI=0.834) and Latvia has the 48th place (HDI=0.810). In 2013 in Europe and Central Asia HDI was 0.738 and the world’s HDI was 0.702 that is less than in the Baltic States. Since 2008, Estonia has kept its position in the rating, when Lithuania has been up one position in the rating but Latvia has been down to seven places for the same period (United Nations Development..., 2014a).

Education Index values of the Baltic States have grown from 1990 to 2005 (Fig. 2) from 0.601 to 0.796 in case of Latvia, from 0.662 to 0.850 in case of Lithuania and from 0.674 to 0.855 in case of Estonia. Since 2005, Lithuania has the highest Education Index and the lowest – Latvia. However, the changes of each country’s Education Index value are changing in the frames of 0.001 to 0.01.

"Analyses of the US and European regions show that highly educated workers are important drivers of regional development in terms of jobs as well as incomes per capita” (Glaeser E. et al., 1995; Simon C., 1998; Cheshire P. C. and Magrini S., 2000; Badinger H. and Tondl G., 2003; Ahlin L. et al., 2014).
The authors support the idea that “producing human capital is a necessary but not sufficient condition to guarantee local development because of the fundamental role that migration plays” (Faggian A. and Franklin R. S., 2014). There are two main possibilities for rural areas. First, creation of human capital investing in education or cooperating with other areas. Second, attraction of developed human capital owners, e.g. creating an impetus for young specialists with tertiary education to work for their organisation.

Conclusions, proposals, recommendations

Education is an important element of the countries’ HD towards knowledge-based economy. The different aspects are taken into account, like evaluation of the education level in the countries. Each of them reflects and stimulates HD and knowledge economy development.
1. The Baltic States provide a pool of highly educated workers/specialists in comparison to other European and Central Asian countries. The Baltic States’ rural areas have a quantitative potential for development in terms of human capital.
2. Estonia and Lithuania have greater potential to successful transition to the knowledge-based economy than Latvia. Latvia has the lowest positions in all observed ratings and most probably does not use all its potential.
3. In the rural employment and development context, it is important to form a shared system between the rural plans and strategies and educational institutions. It can be beneficial for municipalities of rural areas to cooperate with educational institutions in the urban areas and create an environment that would encourage local population that receive tertiary education in urban regions to return after graduation.
4. Municipalities of rural regions could also invest more resources in education and involve/attract youth into the education process to avoid NEETs problems. Some social events or/and projects can be associated with the further employment possibilities, patriotic culture expansion.
5. The hypothesis to test in further studies is - education as an element of HD has a high influence on rural development in general.

Bibliography


