HUMAN DEVELOPMENT INDEX AS A TOOL TO ASSESS SOCIAL DEVELOPMENT IN THE BALTIC STATES

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Reinvigorating Russia's development strategy requires a comparison between the social development of the Russian Federation and other Baltic region states, some of which are world leaders in terms of living standards. The most popular tools for country comparison are composite indices that take into account various components affecting the quality of life. This article analyses the current level and changes in the social development of the Baltic States in 1990—2016. The analysis is based on the values of human development index. Having distinct advantages and disadvantages, this index remains to be the most popular and influential tool for assessing a country's social development. A statistical analysis carried out with the use of HDI values makes it possible to divide the Baltic States into three groups according to their current development level and advancement trajectories. The greatest gap in progress was observed in 2000. Later, it narrowed as the social advancement of the third group — Lithuania, Latvia, and Russia — accelerated. The nature of the Baltic States' social improvement in 2015—2016 suggests that a decrease in social development rates will be observed in the coming years across the region, and the gap between the countries will increase.

Key words: national social development, Baltic region, human development index

Introduction

An increase in the social development level — usually measured as improvements in the quality of life and wellbeing [6] — is a major goal for a welfare state. Being a principal goal of national development, an increase in the level of social development is a *sine qua non* for eco-

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nomic growth and global competitiveness [1]. Paul Krugman sees human capital as a key 'second nature' factor in the development of any territory [14]. The higher the standards of living, the more effective the labour resources, which serve as a crucial factor in economic growth. A country's level of social development affects its international attractiveness and creates opportunities for recruiting international investors. Thus, estimating a country's level of social development — particularly, in the context of a cross-country comparison and analysis — has major research and applied significance.

In describing the desired level of national social development, researchers and public figures often quote the EU countries — particularly, those of the Baltic region (Sweden, Denmark, Finland, and Germany) — as an example for Russia. It seems important to compare and analyse the level of social development in the Baltic region states — Germany, Denmark, Sweden, Finland, Poland, Russia, Lithuania, Latvia, and Estonia [7]. This study will identify the key trends in the countries' social development and Russia's standing among them.

The methodology for estimating national social development levels

Comparing countries in terms of social development is a complex problem. The very notion of 'a country's social development' is multi-aspect. It requires taking into account both quantitative and qualitative indicators of the quality of life and standards of living. Usually, cross-country comparisons use composite indicators encompassing different qualitative and quantitative indicators. Approaches to defining social development and the parameters used to estimate it change as the number of relevant studies increases.

The book *The Quality of Life: Facets of the Problem in the Focus of Transformations* [6] distinguishes four consecutive periods in social life studies:

1) the late 1940s-early 1960s. Cost and social accounting system indicators were used;

2) the 1960s. The first composite systems of social indicators were created at the time. The indices of personal satisfaction with different aspects of life were created. Social indicators found a practical use in identifying social policy priorities and assessing different social programmes;

3) the 1970s-1990s. Composite social indicators were developed and universal criteria for social indicator systems were formulated;

4) the 1990s-the present. Special attention is paid to socioeconomic planning, improvements in wellbeing, standards of living, and quality of life. The quality of life has become a composite indicator used in assessing social projects and programmes.

The diversity of research approaches to the concepts of 'social development' and 'quality of life' [3] gave rise to the emergence of numerous composite indices of different popularity and authority. All the existing techniques for, and approaches to, estimating the social development level and quality of life can be divided into three groups, depending on the agent of assessment [5, p. 29]:

1) objective concepts, whose calculation methods use objective, independent indicators;

2) subjective concepts, based on people's perceptions of their living conditions. This group includes methodologies using expert evaluations;

3) mixed concepts, encompassing both subjective and objective factors.

This article aims to compare the social development levels in the Baltic region countries and trace changes in such levels. A methodology for a cross-country comparison should be selected to reach this goal. It is logical to use a methodology that was developed by an authoritative organisation and that has gained wide popularity and received expert recognition. A noteworthy tool for selecting a research methodology is described in N. Rybanov and V. S. Tikunov's article 'On the methodology for assessing the human development index and its application in Russia' [8]. The authors analysed the popularity of different methodologies, based on the number of web search results. This tool was used to rank the most widely-known methodologies (table 1).

Table 1

A ranking of methodologies for assessing national social development levels, based on the number of web search results

Index	Commissioned by	Citation index*
Human Development Index (HDI)	UN	35 990 000
Gross National Happiness (GNH)	King of Bhutan Jigme Singye	6 520 000
Social Progress Index (SPI)	Harvard Business School and Massachusetts Institute of Technology	4 380 000
Better Life Index (BLI)	Commission on the Measurement of Economic Performance and Social Progress	3 390 000
World Happiness Index (WHI)	UN Sustainable Development Solutions Network	1 450 000
Happy Planet Index (HPI)	New Economics Foundation (NEF)	760 000
Genuine Progress Indicator (GPI)	Redefining Progress	740 000
Quality-of-life	*The Economist*	486 000
Physical quality-of-life index	Overseas Development Council	130 000
Vanderford-Riley wellbeing schedule	No data	5 260

* Number of Google search results (March 24, 2017).

Source: compiled by the author.

The results suggest that the most widely-known and applied methodology is the Human Development Index (HDI). Developed for the UN Development Programme (UNDP), this composite index has been calculated for all UN countries since 1990.

The Human Development Index: Strengths and Weaknesses

The initial HDI methodology took into account three indicators of national social development:

1) life expectancy, which estimated medical development, environmental protection, quality of nutrition, drug safety and availability, etc.;

2) adult literacy rate (primary, secondary, and tertiary gross enrolment ratio), which estimated the availability of basic educational services and gave an idea of the quality of labour resources;

3) and standard of living measured using the GDP (PPP) [19].

The Human Development Index has a number of advantages over other relevant methodologies.

1) The HDI is an objective concept, based on reliable statistics. The results are verifiable and any subjective bias is ruled out.

2) The methodology has been used over a long period (since 1990) and the index is calculated annually for all UN countries. Thus, the HDI can be used in a cross-country comparison, on the one hand, and it is instrumental in analysing changes in the intensity and nature of national social development, on the other. Most other popular methodologies are either relatively young or they are not used on a regular basis, which complicates their practical use.

3) The HDI can be used to compare the level of social development at a national, macro, and micro level. The authors of the UNDP-commissioned annual global ranking present summary results of the social development level calculations for both countries and macroregions. There are Russian publications that apply this methodology to Russian regions [4; 9]. The HDI methodology makes it possible to compare between not only macroregions or countries but also national regions. This helps to identify social development trends for local territories.

Alongside these strengths, the UN index has a number of weaknesses. From the very beginning, the methodology has been criticised on a number of grounds, which can be divided into three groups.

1) Calculation techniques. Some researchers criticise the equal weighting of the parameters [12; 28]. As Jack Hou et al. [18] stress, countries that have similar HDI can differ dramatically in their performance when it comes to individual index components. The high development of one component can mask the underdevelopment of the others. Another ground for criticism is the strong dependence of the HDI on GDP per capita. I. V. Bubis et al. [2] perform a correlation analysis to prove this dependence. In effect, this means

that the index designed to estimate the overall social development strongly depends on the national well-being. Moreover, the correlation with other important components of the quality of life is rather weak. Many authors have proposed measures to improve the HDI calculation technique [30; 33; 34].

2) HDI components. Many researchers have stressed that the parameters taken into account in calculating the HDI do not encompass all aspects of a nation's life. The most popular parameters indicated as missing are the environmental condition [15; 32], civil rights and political freedoms [11], and the availability of social services and social inequality [31; 35].

3) Lack of objectivity. Some researchers [13; 17; 27] argue that the parameters used in calculating the HDI are a result of long-term processes and phenomena (for instance, life expectancy). Thus, the index describes the past rather than the present. Governmental initiatives will not immediately affect the ranking. It is concluded that the index does not give an idea about social policies currently pursued by the states or about national priorities.

The authors of the index take into account the criticism and improve the methodology each year. In 2010, the methodology was substantially revised through introducing inequality adjustment. However, the criticism of the index did not abate [10; 29; 36].

Despite the criticism, the HDI remains the most popular and authoritative international measure of social development. It can be used to analyse all UN countries, including the Baltic region states examined in this article.

The results of an HDI-based comparison of the Baltic region states

Table 2 shows the Baltic region states' HDI in 1991 — 2016. The table includes data on each year's top ten countries for the purposes of comparison. The 1991 report — the first report published in 1990 did not detail the total HDI for individual countries — placed the six Baltic region states at the top of the list. Sweden broke into the top ten (ranked fifth) and Germany, Denmark, and Finland into the top twenty. Poland and the USSR were ranked 32nd and 33rd (table 2). The 1995 ranking included nine Baltic region states, with Finland and Sweden holding top positions. Lithuania, ranked 72nd, had the lowest HDI. After the 2010 revision of the calculation technique, the results changed significantly, which affected the positions of the Baltic region states in the ranking.

In 2005, the ranking was topped by Norway, which had an HDI of 0.963. In 2010, Norway retained its top position but its HDI decreased to 0.938. In 2010, Sweden and Germany broke into the top ten. However, each country lost approximately 0.05 in the score. Other Baltic region states demonstrated a worse performance in comparison to 2005. In the most recent 2016 ranking, Germany and Denmark topped the ranking. Sweden and Finland moved down, whereas other Baltic region countries improved their score. In 2016, all the countries of the region made it into the top fifty.

Table 2

The Baltic region states in the HDI ranking, 1991—2016

1991			1995			2000			2005			2010			2016		
Rank	Country	HDI	Rank	Country	HDI	Rank	Country	HDI	Rank	Country	HDI	Rank	Country	HDI	Rank	Country	HDI
Top ten*																	
1	Canada	0.982	1	Canada	0.950	1	Canada	0.935	1	Norway	0.963	1	Norway	0.938	1	Norway	0.949
2	Japan	0.981	2	USA	0.938	2	Norway	0.934	2	Iceland	0.956	2	Australia	0.937	2	Australia	0.939
3	Norway	0.978	3	Japan	0.937	3	USA	0.929	3	Australia	0.955	3	New Zealand	0.907	3	Switzerland	0.939
4	Switzerland	0.977	4	Netherlands	0.936	4	Australia	0.929	4	Luxembourg	0.949	4	USA	0.902	4	***Germany***	0.926
5	***Sweden***	0.976	5	***Finland***	0.934	5	Iceland	0.927	5	Canada	0.949	5	Ireland	0.895	5	***Denmark***	0.925
6	USA	0.976	Б	Iceland	0.933	6	***Sweden***	0.926	6	***Sweden***	0.949	6	Lichtenstein	0.891	6	Singapore	0.925
7	Australia	0.971	7	Norway	0.933	7	Belgium	0.925	7	Switzerland	0.947	7	Netherlands	0.890	7	Netherlands	0.924
8	France	0.969	8	France	0.931	8	Netherlands	0.925	8	Ireland	0.946	8	Canada	0.888	8	Ireland	0.923
9	Netherlands	0.968	9	Spain	0.930	9	Japan	0.924	9	Belgium	0.945	9	***Sweden***	0.885	9	Iceland	0.921
10	UK	0.962	10	***Sweden***	0.929	10	UK	0.918	10	USA	0.944	10	***Germany***	0.885	10	Canada	0.920
Baltic region states																	
12	Germany	0.955	15	Germany	0.921	11	Finland	0.917	13	Finland	0.941	16	Finland	0.871	14	Sweden	0.913
13	Denmark	0.953	16	Denmark	0.920	14	Germany	0.911	14	Denmark	0.941	19	Denmark	0.866	23	Finland	0.895
14	Finland	0.953	43	Estonia	0.862	15	Denmark	0.911	20	Germany	0.930	34	Estonia	0.812	30	Estonia	0.865
32	Poland	0.874	48	Latvia	0.857	44	Poland	0.814	36	Poland	0.858	41	Poland	0.795	36	Poland	0.848
33	USSR	0.873	51	Poland	0.855	46	Estonia	0.801	38	Estonia	0.853	44	Lithuania	0.783	37	Lithuania	0.848
			52	Russia	0.849	52	Lithuania	0.789	39	Lithuania	0.852	48	Latvia	0.769	44	Latvia	0.830
			71	Lithuania	0.796	62	Russia	0.771	48	Latvia	0.836	65	Russia	0.719	49	Russia	0.804
						63	Latvia	0.771	62	Russia	0.795						

* Comment: The Baltic region states are marked by bold italics.

Source: compiled by the author based on [20—25].

It is important to consider changes in the Baltic region countries' HDI in 2010—2016, with a focus on individual index components. Table 3 shows the relevant data. All parameters are inequality-adjusted.

Table 3

The Baltic region states' HDI and its components, as of 2010 and 2016

HDI	2010					2016				
	HDI	Inequality-adjusted HDI	Inequality-adjusted life expectancy at birth	Inequality-adjusted education index	Inequality-adjusted income index	HDI	Inequality-adjusted HDI	Inequality-adjusted life expectancy at birth	Inequality-adjusted education index	Inequality-adjusted income index
Sweden	**0.885**	0.824	0.934	0.825	0.726	**0.913**	0.851	0.928	0.826	0.806
Germany	**0.885**	0.814	0.911	0.858	0.689	**0.926**	0.859	0.905	0.891	0.787
Finland	**0.871**	0.806	0.913	0.805	0.711	**0.895**	0.843	0.907	0.830	0.796
Denmark	**0.866**	0.810	0.884	0.813	0.738	**0.925**	0.858	0.894	0.896	0.789
Estonia	**0.812**	0.733	0.784	0.851	0.590	**0.865**	0.788	0.835	0.856	0.684
Poland	**0.795**	0.709	0.829	0.728	0.590	**0.848**	0.770	0.840	0.806	0.685
Lithuania	**0.783**	0.693	0.752	0.804	0.551	**0.848**	0.759	0.778	0.833	0.675
Latvia	**0.769**	0.684	0.768	0.778	0.536	**0.830**	0.742	0.780	0.803	0.653
Russia	**0.719**	0.636	0.661	0.631	0.616	**0.804**	0.725	0.705	0.796	0.678

Source: [24; 26].

As table 3 shows, among all the indicators comprising the HDI, the Baltic region countries differ most in the inequality-adjusted life expectancy at birth. In 2016, the difference between the best (Sweden) and worst (Russia) scores reached 0.223. The least significant difference is observed in the inequality-adjusted education index. In 2016, the maximum difference was 0.1.

Table 3 suggests that the gap in the development of the Baltic region states was narrowing in 2010—2016. In 2010, the difference between the highest (Sweden) and lowest (Russia) HDI score was 0.166. In 2016, it reduced to 0.122. The convergence of other parameters was even more evident. The maximum difference in the inequality-adjusted income index reduced from 0.202 to 0.153 (–0.049), in the inequality-adjusted life expectancy at birth from 0.273 to 0.223 (–0.50), and in the inequality-adjusted HDI from 0.188 to 0.122 (–0.054). The most rapid convergence of scores was observed in the inequality-adjusted education index — the difference between the highest and lowest scores reduced from 0.227 to 0.1 (–0.127).

An HDI-based analysis of changes in the levels of the Baltic region states' social development in 1990—2016 has shown that using the index in retrospective studies is rather problematic. The authors' aspiration to improve and update the calculation methodology — to say nothing of the 2010 revision — does not make it possible to analyse the changes in social development factors. The HDI score of Norway, which was named the world's leader in social development in 2016, changed many times from 1990 to 2016. It is very unlikely that the actual social condition improved or deteriorated over that period. Rather, the difference in the scores is explained by changes in the index calculation methodology. As a composite indicator of social development, the human development index can be used to compare the performance of countries within one year. However, it does not yield similar results when considering changes over a certain period. With this in mind, the index authors [25] recalculated the 1990—2015 HDI scores, using the current calculation methodology. They also aggregated the rates of changes in HDI scores (table 4).

Table 4

Adjusted HDI for the Baltic region states, 1990—2015

Country	HDI								Average HDI change			
	1990	2000	2010	2011	2012	2013	2014	2015	1990—2000	2000—2010	2010—2015	1990—2015
Germany	0.801	0.860	0.912	0.916	0.919	0.920	0.924	0.926	***0.71***	***0.59***	***0.30***	***0.58***
Denmark	0.799	0.862	0.910	0.922	0.924	0.926	0.923	0.925	***0.76***	***0.55***	***0.32***	***0.59***
Sweden	0.815	0.877	0.901	0.903	0.904	0.906	0.909	0.913	***0.73***	***0.28***	***0.25***	***0.45***
Finland	0.783	0.856	0.878	0.884	0.887	0.890	0.893	0.895	***0.90***	***0.25***	***0.37***	***0.53***
Estonia	0.728	0.781	0.838	0.850	0.856	0.860	0.863	0.865	***0.71***	***0.70***	***0.65***	***0.69***
Poland	0.712	0.784	0.829	0.834	0.838	0.850	0.852	0.855	***0.97***	***0.56***	***0.62***	***0.74***
Lithuania	0.731	0.757	0.826	0.830	0.834	0.841	0.846	0.848	***0.36***	***0.87***	***0.53***	***0.60***
Latvia	0.703	0.728	0.810	0.812	0.814	0.822	0.828	0.830	***0.35***	***1.07***	***0.49***	***0.67***
Russia	0.733	0.720	0.785	0.792	0.799	0.803	0.805	0.804	***0.18***	***0.87***	***0.48***	***0.37***

Source: [25].

Studying the adjusted HDI scores makes it possible to identify key trends in the changes in the Baltic region states' social development levels in 1990—2015. The smallest difference between the countries' scores was observed in 1990 (0.112). This is explained by a relatively high level of the social development of former Soviet republics at the beginning of the 1990s' economic transition. In 1990—2000, the Baltic region states that had never been part of the USSR (except for Estonia) were showing an HDI increase

rate at 0.7—0.9 per year. Lithuania and Latvia's social development rates were half that level (0.35). In Russia, the social development level was falling, which caused the country's HDI score to decrease (–0.18).

The gap in the social development level was the widest in 2000. The difference between the highest and lowest HDI scores was 0.142. In 2000—2010, the rate of social development was going down in the most developed Baltic region countries (the average annual increment reduced to 0.5 on average and to 0.25 in Sweden and Finland) and increasing (or staying unchanged) in the former Soviet republics. The highest social development rate was observed in Lithuania (1.07). By 2010, the difference in the levels of social development reduced to 0.127.

In 2010—2015, the rates of social development stabilised in the Baltic region states. In the economically developed countries (Germany, Denmark, Sweden, and Finland), the rates were going down, with the increment ranging from 0.25 to 0.37. In other countries, the rates also decreased but remained rather high in comparison to those of the region's most developed states. The highest rates were observed in Estonia (0.62) and Poland (0.62). The stabilisation of social development rates in the Baltic region affected the difference in the social development levels. The 2015 difference between the highest and lowest HDI scores was equal to that of 2010 (0.122).

Conclusions

The following conclusions can be drawn from the HDI-based comparison of the Baltic region states' social development levels.

The Baltic region states can be divided into three groups, based on the features of social development.

1. *Countries with a very high level of social development, world leaders. This group comprises* Germany, Denmark, Finland, and Sweden. These countries showed a high level of social development in 1990 and demonstrated high social development rates in the following ten years. The rate started to decrease in 2000. In 2015, it was almost one-third of the 1990—2000 level. The internal ranking within the group also underwent changes. Until the 2010 HDI methodology revision, Sweden and Finland were the Baltic region leaders in terms of social development. They made it into the global top 15 each year. In 2015, Denmark and Germany became the leaders in the group.

2. *Countries of rapid social development, runners-up. The group brings together* Estonia and Poland. In 1991, they lagged behind group 1 by a significant margin. The two countries' performance was comparable to that of Latvia, Lithuania, and Russia. In 1990—2000, Poland and Estonia demonstrated high social development rates, comparable to those of the region's leading countries. The rates went down in the following years but remained rather high until 2015. In 2010—2015, the two countries demonstrated the

highest rate of social development across the Baltic region, which brought them closer to group 1. However, this holds true only for the original HDI. When the inequality-adjusted index is considered (table 3), the difference between Poland and Estonia, on the one hand, and group 1 countries, on the other, becomes more significant.

3. *Countries with an average level of social development. This group comprises* Lithuania, Latvia, and Russia. These countries demonstrated low, and even negative (Russia), social development rates in 1990—2000, which was explained by the economic transformations taking place in the countries. After 2000, these countries' development rates were the highest across the Baltic region. This made it possible to narrow the gap of the 1990s. In 2010—2015, the development rates went down in these countries. They were outstripped by Poland and Estonia. However, group 3 rates were 1.5 times those of group 1.

When forecasting the future changes in the HDI ranking of the Baltic region states, it is important to keep in mind an important feature of the calculation methodology. Similar to many other global studies, the index uses two-year-old statistics. This means that the 2016 ranking illustrates the countries' social development level of 2014. In view of this fact and the nature of the Baltic region states' social development observed in 2015—2016, one can expect that the rankings to be published in the next two years will show a decrease in social development rates and a wider gap between the countries.

In conclusion, it is clear that the Human Development Index as a tool to estimate national social development levels has both strengths and weaknesses. It is rather difficult to estimate the level of social development, using this index. Different composite indexes employed in the academic community offer different perspectives on social development. However, the estimates of a country's social development can differ significantly, when prepared using different methodologies. For instance, the Happy Planet Index [16] proposed by the UK's New Economic Foundation placed all the Baltic region states in group 30—40 and much lower in 2016. Denmark ranked 32nd (HPI score of 32.7), Finland 37th (31.3), Germany 49th (29.8), Sweden 61st (28), Poland 62nd (27.5), Lithuania 107th (21), Russia 116th (18.7), Estonia 118th (17.9), and Latvia 121st (17.1).

The happiest countries of 2016 were Costa Rica (with an HPI score of 44.7), Mexico, Colombia, Vietnam, and Panama. These results are explained by the index methodology, which takes into account average subjective life satisfaction, life expectancy at birth, and ecological footprint per capita. Economic indicators are not used in calculating the index.

The proposed approach to estimating the level of the Baltic region states' social development is just one of the possible alternatives. The results obtained make it possible to draw important conclusions about the social development of the countries under consideration in 1990—2016. For further practical applications, these conclusions must be supplemented with the re-

sults of a detailed statistical and expert analysis of each country's social development level. Such an analysis should take into account historical, current, and forecasted features of national socioeconomic and political development.

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