

Contents of Global Talent Evaluations: Baltics & Serbia

Antanas Buracas¹, Vytas Navickas¹

¹*Faculty of Social Education, Lithuanian University of Educational Science, Lukesciu 15, Vilnius, Lithuania.*

Abstract - The study discusses the reliability of global talent competitiveness (GTC) as a framework of determinants based on multiple criteria assessment methodology presenting the comparisons of Baltic States and Serbia as a case study. The multiple criteria evaluation principles are focused on the knowledge components interdependencies with global talent determinants as well as other criterial systems used for the innovation strategies.

The approach in a research under review and detailing of GTC criterial system when evaluating the talent potential determinants revealed some benefits of multicriteria decision making analysis. The GTC index is a useful instrument for rational global talent management when using the EU structural funds, intersectorial distributing of limited resources for more rational development of labour & vocational skills, for evaluating the innovation and talent growth determinants.

Keywords – global talent competitiveness; knowledge determinants; labour & vocational skills.

1. Introduction

The international comparisons of the global competitiveness determined by innovation and intellectual economics indices were initiated by the WEF together with INSEAD a/o institutions measuring innovation parameters in knowledge-based economies, such as the Network Readiness Index (NRI, since 2001; interconnected with the Global Information Technology Index), Global Innovation Index (GII, since 2007) and, last time, Global Talent Competitiveness Index (GTCI, since 2013) [1], [2], [3], [4]¹. The advantage of these integral competitiveness indicators used by WEF is the wide international comparability of main measurable parameters determining innovation potential in different countries, however the significance some of them undoubtedly can substantially fluctuate. As a result, this requires of experienced expert evaluations before using some comparative conclusions for strategic investment and development with account of sectorial, countries' a/o peculiarities.

¹ Both last indices were developed last 10 years together with the World Intellectual Property Organization (WIPO) and Cornell University, last years also Human Capital Leadership Institute of Singapore and Confederation of Indian Industries. Some global innovative companies, including Cisco, Alcatel-Lucent, Intel, Booz and Co, and more recently Huawei, Du and Adecco, also supported this effort.

In particular, the strategic development insights of the global innovations and talent potential have to stimulate the workout of alternatives, to contribute to the general social and economic transformations and to diminish the emerging risks of innovations.

The universal multiaspect contents of talent concept itself was modified² for practical purposes of competitiveness measurement by interconnecting it with measurements of knowledge skills and the results of their application (innovations), i.e. pillars measured by GII and NRI determinant systems [5], [6], [7] developed for modelling the GTCI³. The components of talent efficiency, innovations, and network readiness are interconnected in some degree: talents are grown within some social traditions, cultivated by changing educational systems, and their social significances depend on their successful contacts with entrepreneurs and innovation network readiness. As a result, the global talent potential and its competitiveness strongly depend on partnership between skilful talented people, business, educational system and the government. It is known, that countries have different cultural traditions and apply different strategies to develop and retain talent, and there is a clear correlation with their respective economic and labour market performances [8].

The distribution of intellectual resources between branches and sectors of economic activity is one of the actual directions of social policy when aiming to ameliorate the impact of talents on economic competitiveness. It is clear that structure of talent potential adequate to sustainable innovation support can be developed mostly by structured and advanced economies, and the smaller countries have to cooperate when developing and retaining the necessary availability of highly-skilled workers and talents. As a result of substantial progress in the world global talent potential and modern intellectual development, the part of world below the poverty line diminished from 52 % in 1981 up to 22 % in 2008 [9] but at the same time, as accented WEF Davos forums last three years, social inequality around the world grew

² The talent itself can be defined as: 1. Special aptitude or faculty; 2. High mental ability (*The Oxford English Reference Dictionary*).

³ Some of data indicators used for calculations of GTI & GTCI are similar; the main weights given to university education and quality of labour force (both at 22.2 %). 20 survey data series used for evaluations of GTCI were extracted from the *WEF Executive Opinion Survey* and the *Legatum Prosperity Index*.

and became most important world problem. So, the prevailing opinion of intellectuals is that talent and innovation potential is mostly used by social groups of business for their continuing enrichment and not for proportional benefit of all.

The study based on the GTCI estimated that only about 13 % of world demand for high talented people will be satisfied in the next two centuries, it is why this approach is so important [10]. As a favourably co-affecting process, the business investments in knowledge-based capital who contributed up to 34 % average labour productivity growth in the EU and the US are revealed [11].

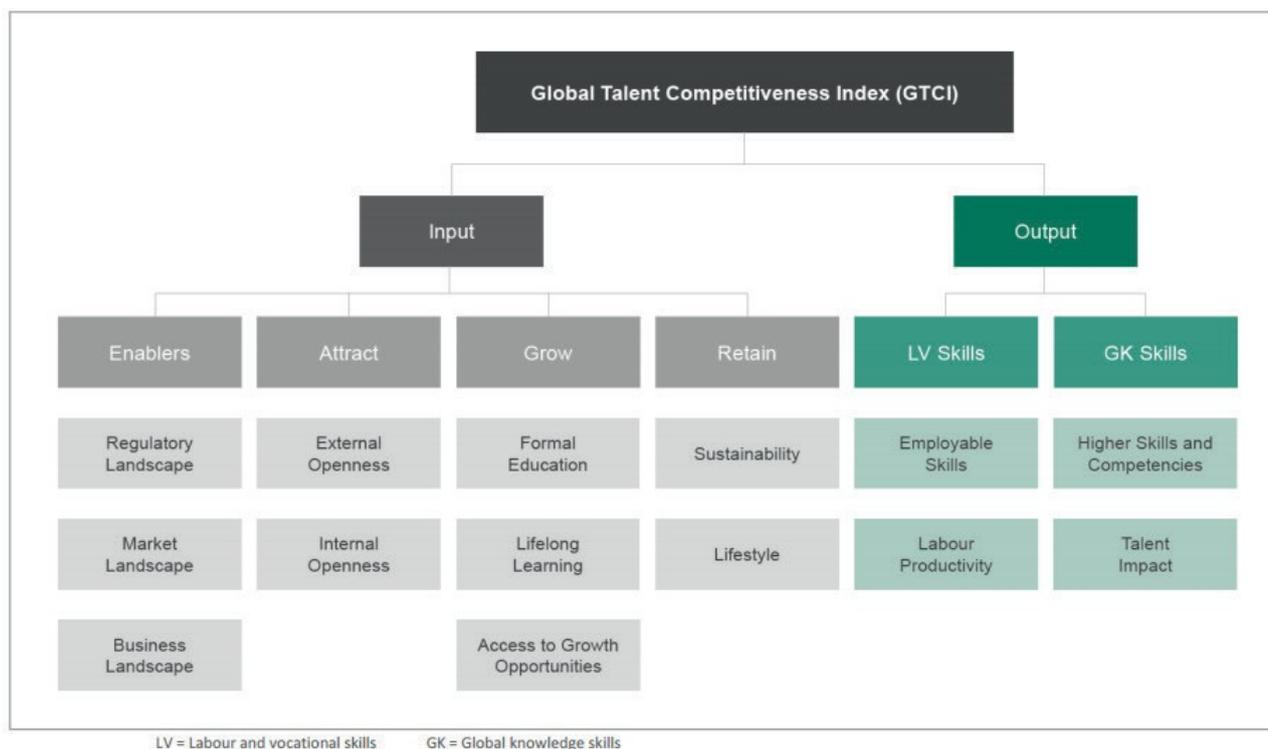
According to the World Bank's Knowledge Assessment Methodology (KAM) framework, the four pillars to innovation processes are identified: *economic incentive* and *institutional regime* (policies and institutions for the protection of intellectual property, the rule of law, the ease of starting business etc.), *education* (human capital), *innovation* (universities, firms, and research institutes), and *ICT* (physical capital). This article is aimed to evaluate some methodical features of applying the GTCI techniques, in particular for cases of Serbia (in 2013, it was on 79th place in the global rank out of 103 countries and in 2014 – not presented) and Baltic States - Latvia (30th and 28th places), Lithuania (39th and 37th places) and Estonia (23rd and 19th places) [12].

2. The Measurable Talent Competitiveness Criteria

The measurement of the GTCI in era of digital revolution is oriented, first of all, to implement better human resource and innovations management policies. It is based, first-of-all, on the knowledge and practical experience (training etc.) to apply productively the necessary high-level skills, or *global knowledge (GK) skills*, especially if they are linked to entrepreneurship and innovation. Other most significant component of GTCI are the *labour and vocational (LV) skills* (necessary for fulfilment of working tasks) measured by labour productivity now substantially dependent from computerised solutions. The technological changes usually impact specific changes in the profiles of employable skills what is especially important to be taken into account within process of dynamic evaluations of GTCI.

All integrated indicators are substantially influenced by *Social Progress index* factors, such as access to basic knowledge, advanced education, tolerance and inclusion determinants, also satisfaction of basic human needs. Main structural interconnections of the GTCI components are presented by simplified way in the Fig. 1 below.

According to the studies reviewed, the talent competitiveness input, output and GTCI sub-indices are generated by using multiple criteria evaluation approach [13]. The last one is average of the scores obtained on levels of those input and output pillars; input sub-index is determined by institutional enablers for talent development, also other means to attract, grow and retain tal-



Source: <http://global-indices.insead.edu/documents/GTCI2014Model.pdf>
 Figure 1. Model of aggregated structural components determining the contents of GTCI

ent; and output sub-index – evaluates GK and LV skills. As a total, 48 benchmarking indicators were included in the comparative evaluation of the GTCI published first time for 103 countries producing 96.7 % of the world's GDP [14] (in the last report, number of indicators was increased to 65 improving the accuracy of evaluations). The GTCI itself was computed as weighed average of the scores registered for each of the pillars (their details see in the section below).

On the one side, it is also shown that the innovative potential of an individual is not an instinctive feature, and essential skills for innovation can be learned – both through approved institutional structures of formal education and traditional ways through experience. As a result, on the other side, the important conclusion consists in developing of innovation-friendly environment as a substantial component of talent competitiveness.

Talent efficiency and adequacy can be evaluated as a result of more detailed comparisons of real differences and similarities in such main characteristics as dimensions of social and economic policies, cultural and historical development, size of economies, their GDP per capita, regional peculiarities etc. For example, brain drain of the talents mostly goes from less developed countries to high developed ones, and this migration factor is substantially worsening the distribution and main dependencies within GTCI model both for Baltic States and Serbia. The global and regional range of those indicators or especially differences on the country levels usually have fluctuate within some intervals [15], [16].

It is possible to suppose that interactions between the GK and LV skills, on the one side, and innovativeness and competitiveness of the economies, on the other, are mutual. So, the skills determining innovative talents require support of innovative economy, also business oriented to leadership and strong education. At the same time, higher levels of the GK and LV skills usually permit to expect higher growth of economic potential, more innovative and higher-quality education.

Some hypothesis concerning talents policy could be verified by this analysis, such as:

the countries under review are experiencing the shortage for highly-skilled labour and losing its internal resources in competition with highly developed Western states;

the finances, marketing, management and ICT sectors are the main competitors for the talented people;

the ageing population request more young labour services, and that can minimise high unemployment of less-skilled youngsters;

the lifelong learning is important factor for transferring accumulated knowledges and balancing civilisation requests for innovations and resources; itself it has to be continuously upgraded [17], [18].

The continuing measurements and dynamic comparisons of the GTCI parameters undoubtedly would help to verify those a/o important hypotheses much better. Naturally, the orientation based only on the rankings of individual countries is insufficient and require higher flexibility of analytical approaches based on multiplicity of compound factors and their parameters.

Complex decisions based on comparisons of the GTCI parameters include the quantitative evaluations of situation in specific countries or their groups on all stages of talent growing – their developing, attracting and recruiting them for innovative business creation. The GTC Index is indicator helping to evaluate integrally the effectiveness of talent-oriented policies and programs, also to ground the priorities of more rational distribution of material, finance and intellectual resources.

3. Comparative Assessment of the GTCI: Serbia & Baltics

The global score of the GTCI for Serbia was 38.57 score (GDP per capita at PPP – 10 405 USD), for Lithuania - 51.21 score (GDP per capita at PPP – 21,615 USD), for Latvia - 53.93 (18,255 USD) and for Estonia – respectively 58.5 score (21,713 USD) [19]. The one of conclusions of the GTCI authors about strong correlation between GTCI scores and GDP per capita is not productive enough in the case of Baltics global talent competitiveness comparison: as can be seen below, the differences in levels of main GTCI components were dependent also from many other factors. Perhaps the ways and forms of the skills upgrading and their using, and esp. innovative investments of leading neighbour (first-of-all, Scandinavian) countries are of different efficiency in these countries.

Table 1. GTCI aggregated determinants in Serbia & Baltics

GTCI aggregated determinants, 2013	Serbia	Latvia	Lithuania	Estonia
Input	39,3	57,1	55,5	60,1
Enablers	44,7	57,4	62,2	65,1
Attract	33,9	54,3	48,6	51,6
Growth	38,3	52,4	49,5	53,8
Retain	40,2	64,1	61,7	69,7
Output	38,2	47,7	42,7	55,4
Labour & vocational	39,2	46,8	41,4	51,9
Global knowledge	35,2	48,6	43,9	59,8

Note: all sub-index rankings are between 0 and 100. Expert evaluations for comparative analysis here and below were taken from the source [19].

The comparative evaluations of expert scoring for Serbia and all three Baltic countries revealed their most differing institutional and infrastructural parameters (the expert evaluations here and below are based on [19]). All output sub-index rankings are on lower level for Baltic countries than their input sub-index rankings but about all of them are at comparable levels with higher significances in Estonia and little bit lower in Latvia and Lithuania (of both last, Lithuania prevailing by most of input factors). The GTCI aggregated determinants for Serbia especially input levels are lagging from Baltic countries, mostly from Estonia, see Fig. 2.

Created here and below by authors on the basis of the GTCI expert data.

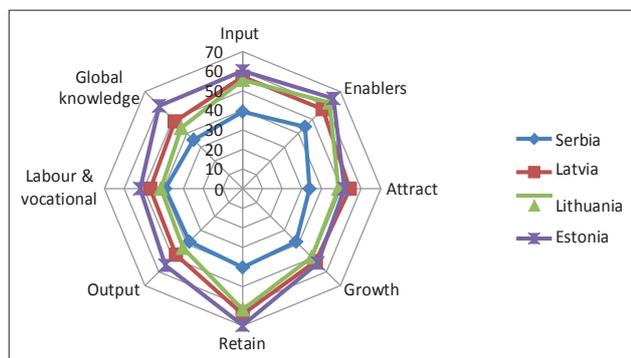


Figure 2. Comparisons of GTCI aggregated determinants in Serbia & Baltics

The more detailed understanding of the factors determining the differences in GTCI rankings of Serbia and Baltic countries may be revealed by the detailed analysis of their revealed pillars. All of them but especially Lithuania suffer from unfavourable emigration of labour resources; also all of them are experiencing the brain drain of the most talented people. The foreign students' inflow is rather weak in Lithuania.

Table 2. Comparison of selected GTCI pillars directly determining talent effect: Serbia & Baltics
Selected by authors on the basis of the GTCI expert data.

Selected GTCI scores by determinants	Serbia	Latvia	Lithuania	Estonia
R&D expenditure	20,5	13,3	17,7	36,6
ICT access	65,2	61,9	68,4	76,7
Qualified labour inflow	40,8	35,5	28,0	39,3
Technical/vocational enrolment	79,8	51,9	24,2	41,4
Lifelong learning	36,5	52,8	52,6	55,7

Employable skills	49,1	51,8	38,7	55,1
Higher skills and competencies	28,1	47,0	54,0	58,1
Talent impact	42,3	50,1	33,9	61,6

The talent impact is resulting measure determined by innovation output (see GII) and new product entrepreneurial activity (% of entrepreneurs producing new products or services). The innovation output is derived from aggregating knowledge and technology output (it covers knowledge creation, impact and diffusion) and creative output (the last one includes creative intangibles, creative goods and services and online creativity). The knowledge creation itself is measured by such parameters of inventive and innovative activities, as patent applications and recognized (cited) scientific publications. The knowledge impact is measured by innovations impact on real economy, such as increases in labour productivity, also by entry of new firms, by certifications and international standardization [21], [22].

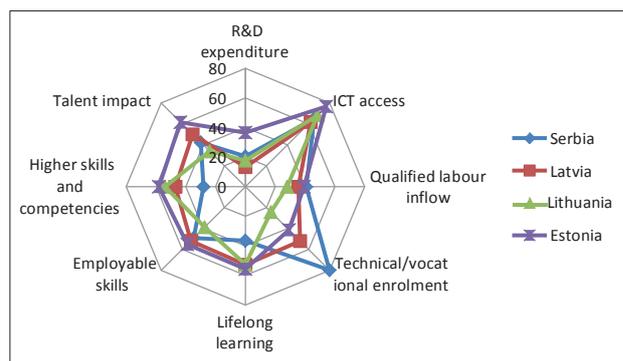


Figure 3. Comparison of selected GTCI sub-index scores directly determining talent effect in Serbia & Baltic States

It is interesting that the significance of this very important GTCI determinant (or pillar) is much worse for Lithuania (34 score) than for Serbia (42.3), Estonia (61.6) and Latvia (50 score); and it is more distant than those of GTCI input and output sub-index rankings (Fig. 3). It seems experts have evaluated the impact of some differences in the R & D expenditures (36.6 scores for Estonia against 13.3 for Latvia, 17.7 for Lithuania and 20.5 - for Serbia). The technical/vocational enrolment is highest in Serbia (nearly 80 scores), and high in Latvia (52 scores) against Lithuania (24) and Estonia (41.4 scores). At the same time the differences between expert evaluations of higher skills and competencies are not so substantial for Baltics but important for lagging Serbia (28 score against 47-58 in the Baltics). Naturally, the numbers of students enrolled in science and technology are not necessarily adequate to creative people with the crit-

Table 3. Comparison of the GTCI enablers' components rankings in Serbia & Baltic States

GTCI input scores by components	Serbia	Latvia	Lithuania	Estonia
1 Enablers	44,7	57,4	62,2	65,1
1.1 Regulatory landscape	58,5	63,3	67,4	74,7
1.1.1 Government effectiveness	28,6	53,4	53,3	68,9
1.1.2 Political stability	57,9	73,3	81,5	80,6
1.2 Market landscape	37,5	51,7	53,7	63,8
1.2.1 Intensity of local competition	43,6	64,3	68,3	75,0
1.2.2 Venture capital availability	15,6	32,4	23,1	36,0
1.2.3 Firm-level technology absorption	42,6	58,5	66,9	75,0
1.2.4 R&D expenditure	20,5	13,3	17,7	36,6
1.2.5 ICT access	65,2	61,9	68,4	76,7
1.2.6 Ease of doing business	37,3	79,5	77,5	83,4
1.3 Business landscape	38,2	57,3	65,6	56,7
1.3.1 Labour market flexibility	38,5	58,9	74,1	43,3
1.3.2 Reliance on professional management.	37,9	55,6	57,1	70,2

*Venture capital availability. ** Reliance on professional management.

Edited by authors on the basis of the GTCI expert data.

ical thinking, and communication skills required for innovative activities [23].

The more detailed review of the GTCI input sub-index rankings for *enablers* in the countries under review revealed following details (see Table 3 and Fig. 4).

The more significant differences on R&D expenditure's scores substantially depend on the funds (as part of GDP) allocated, also professional management (Estonia rather high 70.2 score, Lithuania 57.1, Latvia 55.6 and Serbia – about 38 score) which looks sufficiently objective. The situation with *Labour market flexibility* is about opposite with Estonia and Serbia having less inelastic market comparing with other Baltic neighboring countries (Serbia near 39 score,

Estonia 43.3, Lithuania 74.1 and Latvia 58.9 score). It results from still continuing emigration from Lithuania and Latvia to Western European and Scandinavian countries with much higher wages and better social conditions (suppose the same is actual for Serbia). It is noteworthy to mention also the less favourable *Innovation climate* in Serbia (15.6 score), Lithuania (23 score; Estonia – 36.6 score) measured by Venture capital availability; however this climate depend also on many other factors as bureaucracy and legal procedures etc. Estonia also has much better *Government effectiveness* (69 score when Lithuania and Latvia – only about 53 and Serbia – only 28.6 score).

Table 4. Comparison of the GTCI attract components' rankings in Serbia & Baltic States

GTCI attract scores by components	Serbia	Latvia	Lithuania	Estonia
2. Attract	33,9	54,3	48,6	51,6
2.1 External openness	33,9	47,7	35,9	41,0
2.1.1 FDI inflow	40,8	42,3	22,6	10,1
2.1.2 Qualified labour inflow	14,3	35,5	28,0	39,3
2.1.3 Prevalence of foreign ownership	46,7	65,3	57,0	73,5
2.2 Internal openness	33,8	61,0	61,3	62,3
2.2.1 Tolerance of minorities	0	66,6	64,1	60,7
2.2.2 Tolerance of immigrants	0	40,6	53,7	46,0
2.2.3 Social mobility	34,3	60,7	59,6	74,3
2.2.4 Female parliamentarians	34,9	37,0	29,2	30,5

*Qualified labour inflow.

** Female professionals and technical workers.

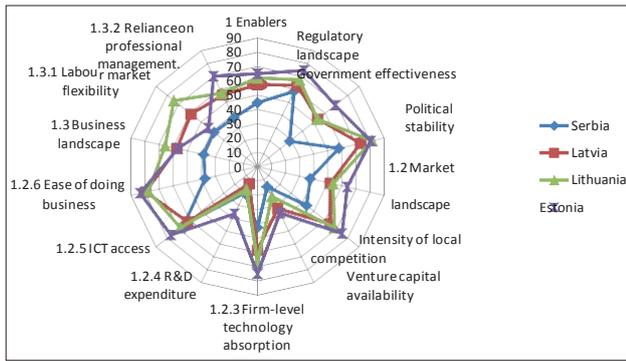


Figure 4. Comparison of the GTCI enablers sub-index rankings: Serbia & Baltic States

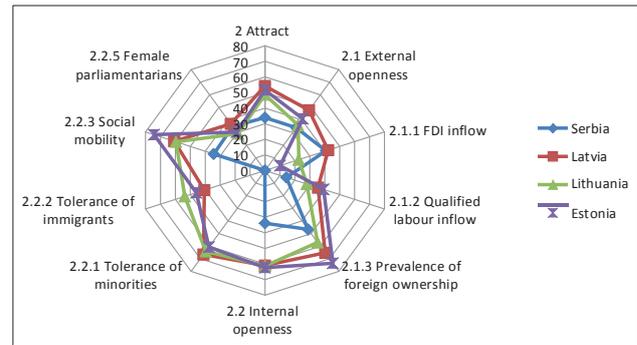


Figure 5. Comparison of the GTCI attract sub-index rankings: Serbia & Baltic States

Table 5. Comparison of the GTCI grow components' rankings in Serbia & Baltic States

GTCI growth scores by components	Serbia	Latvia	Lithuania	Estonia
3.1 Formal education	47,1	54,8	44,5	47,1
3.1.1 Pupil-teacher ratio	92,4	95,3	94,6	94,1
3.1.2 Technical/vocational enrolment	79,8	51,9	24,2	41,4
3.1.3 Performance of education system*	46,9	53,9	66,1	60,9
3.1.4 Reading, maths and science scores	46,6	64,2	61,1	74,9
3.1.6 International students inflow	16,6	8,8	7,4	8,2
3.2 Lifelong learning**	36,5	52,8	52,6	55,7
3.2.1 Quality of management schools	41,0	53,8	55,5	58,2
3.2.2 Extent of staff training	31,9	51,9	49,6	53,1
3.3 Access to growth opportunities	31,5	49,5	51,3	58,7
3.3.1 Use of virtual social networks	53,8	74,4	84,1	89,4
3.3.2 State of cluster development	28,4	37,1	33,8	41,9
3.3.3 Quality of scientific research institutions	43,6	46,3	60,9	65,1
3.3.4 Voicing concern to officials	0	40,1	26,4	38,2

*Tertiary enrolment. ** Further education and training climate.

GTCI input sub-index rankings for *attract* pillars in the Baltic States (Fig. 5) are more even except in particular the differences in levels of FDI inflow (Estonia -10 score, Latvia 42 and Lithuania – 22.6 scores) and social mobility (Estonia -74 score, Latvia 61 and Lithuania – 60 scores). Serbia is lagging from Baltics by most *attract* determinants except not so much in ICT access and Regulatory landscape.

The levels of FDI inflow are rather fluctuating in the Baltic States - after independence many years it was stably highest in Estonia but now it is significantly lagging; so in this case this sub-index characterized inaccurately its impact on competitiveness; or it shows that some GTCI sub-indexes are more reliable when compared by averaged time intervals. The *attract* sub-indices scores for Serbia are less lagging except *Qualified labour inflow* and absence of data on *Tolerance of minorities and immigrants* (Fig. 5).

GTCI input sub-index rankings for *growth* pillars in the Baltic States (Fig. 6) are comparatively similar except the technical/vocational enrolment⁴ (Lithuania – only 24 scores when Estonia 41, Latvia – 52 and Serbia – about 80 scores). Lithuania evaluated its retarding in this aspect and this year started to protect the admissions to technical a/o more applied specialities. Serbia has priority by *International student's inflow* comparing with the Baltics.

Some differences concern parameters for *Use of virtual social networks* (Estonia more than 89 Latvia – 74 and Serbia about 54 scores), also *Voicing concern to officials*⁵ (respectively Estonia more than

4 It is defined as total number of pupils or students enrolled in technical/vocational programmes at a given level of education, expressed as a % of the total number of pupils or students enrolled in all programmes at that level. The level of educational attainment is based on *International Standard Classification of Education (ISCED) Level 3*.

5 Evaluated on basis of Gallup World Poll in their *Legatum Prosperity Index*. The survey was conducted in different time periods across countries between 2007 and 2011 [24].

38, Latvia 40 and Lithuania - only 26 scores; Serbia not evaluated) and *Quality of scientific research institutions* (adequately Estonia - 65, Lithuania 61, but Latvia 46 and Serbia – 44 scores).

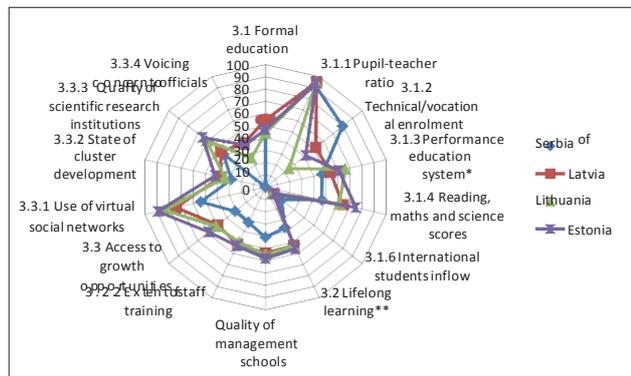


Figure 6. Comparison of the GTCI growsub-index rankings: Serbia & Baltic States

The comparing of GTCI input sub-index rankings for *retain* pillars in the Baltic States and Serbia (Fig. 7) reveal some differences at *Extent and effect of taxation* (Estonia about 59, when Latvia 34, Serbia – 32 and Lithuania - only 30 scores) and *Safety at night* (Estonia more than 65, Latvia 55 and Lithuania - less than 46 scores). If many experts agree with evaluation that taxation in Lithuania is ineffective and unfavourable both for business and individuals comparing with other Baltic States, the comparative levels of *Safety at night* could be disputed and perhaps revealing not so correctly the trend situation.

Serbia was mostly lagging by *retain sustainability* with 39 score when Baltic States variate between 58 and 79 scores. The retain services are measured insufficiently by only *Physicians density* so as it is too wide and expanding sector of activity.

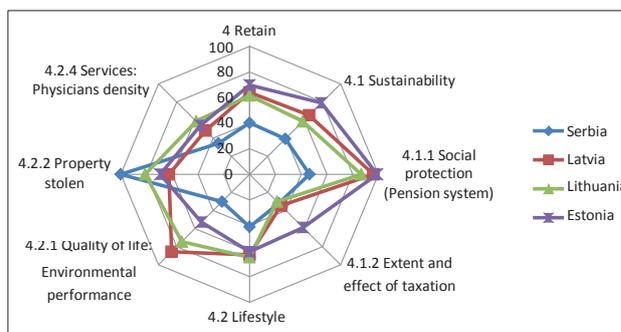


Figure 7. Comparison of the GTCI retaining sub-index rankings: Serbia & Baltic States

GTCI sub-index rankings for *output* determinants are presented in Figures 8 (labour and vocational pillars, based on Table 7) and 9 (global knowledge scores, based on Table 8). In Lithuania the situation concerning *Employable skills* (39 scores) is much worse comparing with its Baltic neighbours (Latvia 52 and Estonia 55 scores) and Serbia (49 score), in particular – with *Secondary-educated workforce* (Lithuania - 45 score, Serbia – 68, Latvia – 72, Estonia - 73 scores). By *Youth employment* Serbia (10 score) and Lithuania (17 score) are lagging from Estonia (about 33) and Latvia (28 scores); Serbia is also standing behind of Baltics by components of *Labour productivity* what results substantially in differences of the GDP per capita. It is interesting to compare the situation concerning the adult skills development in countries under review within wider context presented by the OECD [25].

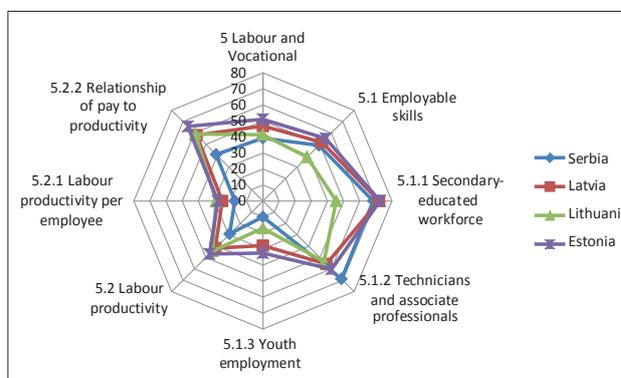


Figure 8. Comparison of the GTCI labour and vocational sub-indexes: Serbia & Baltic States

Table 6. Comparison of the GTCI retain components' rankings in Serbia & Baltic States

GTCI retain scores by components	Serbia	Latvia	Lithuania	Estonia
4 Retain	40,2	64,1	61,7	69,7
4.1 Sustainability	39,2	65,4	58,4	78,9
4.1.1 Social protection (Pension system)	46,5	96,1	86,7	99
4.1.2 Extent and effect of taxation	32,0	34,6	30,2	58,8
4.2 Lifestyle	41,1	62,9	64,9	60,5
4.2.1 Quality of life: Environmental performance	30,2	85,6	74,4	52,9
4.2.2 Property stolen	100	62,6	81,0	69,4
4.2.4 Services: Physicians density	34,2	48,4	58,6	54,0

Table 7. Comparison of the GTCI labour and vocational components in Serbia & Baltic States

GTCI scores by LV components	Serbia	Latvia	Lithuania	Estonia
5 Labour and vocational skills	39,2	46,8	41,4	51,0
5.1 Employable skills	49,1	51,8	38,7	55,1
5.1.1 Secondary-educated workforce	68,4	72,0	45,4	72,6
5.1.2 Technicians and associate professionals	68,9	55,6	53,6	60,2
5.1.3 Youth employment	10,0	27,9	17,0	32,5
5.2 Labour productivity	29,2	41,7	44,1	46,8
5.2.1 Labour productivity per employee	17,4	25,2	29,1	27,9
5.2.2 Relationship of pay to productivity	41,0	58,2	59,2	65,8

GTCI global knowledge concentrates most sensitive parameters directly determining professional competency of potential talents. Respectively, it reveals many differences of all countries under review: p. ex., *Innovation output* (Serbia – 43 score, Lithuania - 42, Latvia – 51 and Estonia 71 scores), *talent impact* (Lithuania – 34, Serbia - 42, Latvia –50 and Estonia 62 scores) and *new product entrepreneurial activity* (Lithuania - 26 score, Serbia - 42, Latvia – 49 and Estonia 52 scores) are much higher in Estonia. The most significant differences of the countries under review concerning sub index of *Knowledge workers* (Serbia - 29, Baltic - between 51 and 56 scores), especially scores evaluating the potential of researchers. In fact, it depends also from regional specialization of main activities and also requires more detailed expertizing so as we can reveal some asynchronic waves of innovations and attendant new product implementation in smaller countries with comparatively not so big economic, technical and intellectual potential [26] as in our comparisons.

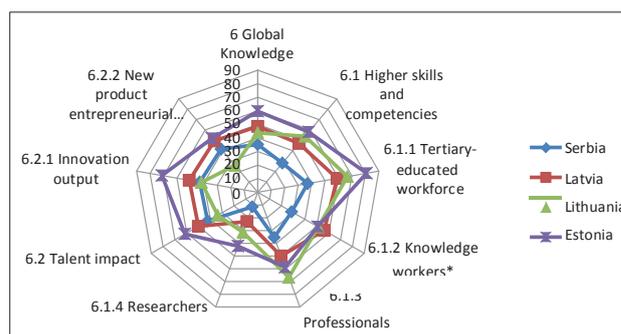


Figure 9. Comparison of the GTCI global knowledge sub-index rankings: Serbia & Baltic States

The analysis done in this section of our detailed review revealed some premises for a GTC approach to strategic programming of sustainable economic expansion so as it exposed the weak and strong global knowledge and innovation determinants or pillars in national talent competitiveness development. Some suggestions and/or generalizations are similar to [27].

Table 8. Comparison of the GTCI global knowledge components: Serbia & Baltic States

GTCI global knowledge scores, by components	Serbia	Latvia	Lithuania	Estonia
6 Global Knowledge	35,2	48,6	43,9	59,8
6.1 Higher skills and competencies	28,1	47,0	54,0	58,1
6.1.1 Tertiary-educated workforce	37,1	59,0	66,7	80,9
6.1.2 Knowledge workers*	28,7	56,2	51,1	50,6
6.1.3 Professionals	35,4	50,0	66,8	58,8
6.1.4 Researchers	11,4	23,0	31,4	42,2
6.2 Talent impact	42,3	50,1	33,9	61,6
6.2.1 Innovation output	43,1	50,9	41,8	71,2
6.2.2 New product entrepreneurial activity	41,6	49,4	26,0	52,0

* Legislators, senior officials and managers.

4. Conclusions

1. The GTCI evaluates the talent implementation results based mostly on the measurable skills of personality and their outcomes. This approach is similar to the meaning of *talent* as a personal ability to find and realize new technological, managerial, marketing or technical etc. solutions. The GTCI is mostly oriented to knowledge skills and innovation measurements, i.e. big part of the same pillars measured by GII and NRI determinant systems.

2. The GTCI measurement and comparison techniques helps to evaluate some hypothesis mentioned in the presentation of the problems to be reviewed and other of them could be understood deeper with account of innovation mechanisms presented by such comparisons.

3. The correlation between GTCI scores and GDP per capita, also between national economic competitiveness and global talent indices is weaker than GTCI model authors expected (in particular, not very applicable within small interconnected group of countries like Baltic States).

4. The global knowledge skills and levels of their implementation are substantially influenced by main social processes and level of reward; for example, the brain drain of the talents mostly goes from less developed countries to high developed ones, and that influence some deviations within main dependencies of the GTCI model.

5. Some deviations potentially evaluating the talent impact by experts for selected medium developed countries are resulting not only from direct brain drain but also from material obstacles to register statistically the real origin of, p. ex., innovations, patents etc.

6. The smaller changes in the weighting of GTCI pillars do not alter substantially the rankings of sub-indices but most scores for Serbia are lagging from Baltics especially by talent input determinants. Some asynchrony waves of innovations and attendant new product implementation in smaller countries with comparatively not so big economic, technical and intellectual potential also distort the global knowledge sub-indices.

7. Serbia has the levels of talent impact and innovation output comparatively higher than its global knowledge parameters when juxtaposing them with those of Baltic States.

8. The GTCI as a total is useful analytical instrument for developing global talent management, for stimulating talented people when distributing the material and intellectual resources, also programming tax incentives for business innovations and to train employees. It also helps anticipating some shortages of human capital and highly skilled labour.

References

- [1]. Bilbao-Osorio, B., S. Dutta, and B. Lanvin eds. (2013). *The Global Information Technology Report*. World Economic Forum and INSEAD.
- [2]. Dutta S., B. Lanvin and S. Wunsch-Vincent eds. (2013). *The Global Innovation Index 2014. The Human Factor in Innovation*. Retrieved from: <http://www.globalinnovationindex.org/userfiles/file/reportpdf/GII-2014-v5.pdf>.
- [3]. *The Global Competitiveness Report 2013-2014*. Ed. by K. Schwab. Retrieved from: <http://reports.weforum.org/the-global-competitiveness-report-2013-2014/>
- [4]. *The Global Talent Competitiveness Index* (2013). Ed. by Bruno Lanvin and Paul Evans, p. 42; 98,143 a/o. Retrieved from: <http://global-indices.insead.edu/gtci/documents/gcti-report.pdf>
- [5]. Buracas A., Zvirblis A. (2013). Knowledge Potential: Main Aggregated Assessment Principles. *Journal of Knowledge Economy and Knowledge Management*, Spring Vol., 2013, p. 63-85. Retrieved from: <http://beykon.org/dergi/2013/SPRING/A.Buracas.pdf>.
- [6]. *Encyclopaedia of Creativity, Invention, Innovation and Entrepreneurship*. Springer, 2014.
- [7]. Evans, P., V. Pucik, and I. Björkman (2011). *The Global Challenge: International Human Resource Management*. New York: McGraw-Hill.
- [8]. *The Global Talent Competitiveness Index* (2013), op. cit.
- [9]. *The Global Talent Competitiveness Index* (2013), op. cit., p.17.
- [10]. *The Global Talent Competitiveness Index* (2013), op. cit., p.19.
- [11]. *Supporting Investment in Knowledge Capital, Growth and Innovation* (2013). Paris, OECD.
- [12]. *The Global Talent Competitiveness Index: Growing talent for today and tomorrow* (2014). Ed. by Bruno Lanvin and Paul Evans, p. 26-27. Retrieved from: <http://global-indices.insead.edu/documents/INSEADGTCIreport2014.pdf>
- [13]. *Metaeconomics approach & intellectual resources evaluation. Multiple objective methods: integrating into decision making* (2013). Ed. A. Buracas et al. LAMBERT Academic Publ. Co.
- [14]. *The Global Talent Competitiveness Index* (2013), op.cit.
- [15]. *Global Talent Risk – Seven Responses* (2011). World Economic Forum. Retrieved from: http://www3.weforum.org/docs/PS_WEF_GlobalTalentRisk_Report_2011.pdf
- [16]. *The Global Talent Index, 2011-2015*. (2011). Ed. by Economist Intelligence Unit, Heidrick and Struggles. Retrieved from: <http://www.managementthinking.eiu.com/sites/default/files/downloads/GTI%20FINAL%20REPORT%205.4.11.pdf>
- [17]. Hüsing et al. (2013). *e-Leadership: e-Skills for Competitiveness and Innovation*. Vision, Roadmap and Foresight Scenarios. Final report. Retrieved from: http://ec.europa.eu/enterprise/sectors/ict/files/eskills/vision_final_report_en.pdf
- [18]. Kumar, K., and D. van Welsum (2013). *Knowledge-Based Economies and Basing Economies on*

Knowledge – Skills a Missing Link in GCC Countries. Research Report RR-188-GCC, The RAND Corporation, Santa Monica, CA

- [19]. *The Global Talent Competitiveness Index* (2013), op. cit.
- [20]. *The Global Talent Competitiveness Index* (2013), op. cit., p. 38, 40.
- [21]. *The Global Talent Competitiveness Index* (2013), op. cit., p.76-77.
- [22]. *Social Progress Index 2014*. Retrieved from: http://www.socialprogressimperative.org/data/spi#data_table/countries/dim2/dim1,dim2,dim3
- [23]. *The Global Talent Competitiveness Index* (2013), op. cit., p. 19.
- [24]. *The Global Talent Competitiveness Index* (2013), op. cit., p.209.
- [25]. *The Survey of Adult Skills* (2013). Paris, OECD.
- [26]. *Talent Shortage Survey Research Results* (2012). Manpower Group Retrieved from: http://www.manpowergroup.us/campaigns/talent-shortage-2012/pdf/2012_Talent_Shortage___Survey_Results_US_FINALFINAL.pdf
- [27]. *Stimulating Economies through Fostering Talent Mobility* (2013). Geneva: World Economic Forum. Retrieved from: http://www3.weforum.org/docs/WEF_PS_TalentMobility_report_2010.pdf

Corresponding author: Antanas Buracas
Institution: Lithuanian University of Educational Science,
Lukesciu 15, Vilnius, Lithuania
E-mail: antanas@buracas.com