IMPACT OF REGIONAL HIGHER EDUCATION INSTITUTIONS ON THE CONVERGENCE OF REGIONS

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Abstract. The global tendencies of economic and social differences between the regions are becoming more significant. While pursuing the reform of the higher education system in Latvia, there has been a lack of focus on the role and impact of the regional higher education institutions. Until now in Latvia only qualitative methods have been used for research in this area. The authors based their study on indicators as the GDP per person and the annual costs of the higher education institutions (HEIs) per student, to reach the research aim: determining the impact of the regional higher education institutions (RHEIs) on the regional convergence in comparison with the Lithuania's experience. Qualitative and quantitative methods were used: content analysis of scientific and applied literature, statistical data; quantitative – correlation and dispersion analysis method. Results: the GDP per capita dispersion of the Latvian NUTS 3 regions in comparison with the Lithuania, indicates of a homogenous subgroups, which average values do not deviate significantly, corresponding to the convergence principle. Meanwhile when comparing the regions with Riga and Vilnius district – divergence can be observed indicating of the limited impact of RHEIs in both countries due to the limiting impact of various social, economic and other factors.

Key words: higher education, impact, regional convergence.

JEL code: D02, H52, I25**.**

Introduction

Education is one of the top five industries with an average worldwide turnover of around 4.9 billion USD (2015), while the increase in comparison to 2014 to accounted to 0.6 trillion (USD) (Robertson S., 2016; OECD, 2016). The aim of the regional development is to promote and ensure balanced-sustainable development of the state, while taking into account the countrywide territorial differences and limited opportunities (NAP, 2012). Global tendencies can be observed in Latvia – overall economic and social differences between the regions and cities are increasing (Špoģis L., et al., 2005; Beeson M., 2010) Countries are interested in understanding the impact of education on the national economy in a regional perspective.

The impact of the education has been investigated by multiple researchers and even institutes (Thaman K. H., 2008; Smas L., 2009; Vilerts K., Krasnopjorovs O., Brekis E., 2015).

The scientific viewpoints on this convergence are different: from socio-economical to econometrical (IHEP, 1998; Gorzelak G., 2000; Regional Convergence in the Europen…, 2002; Carrington, A., 2003).

Aim of the research: to define the impact of regional higher education institutions on the region convergence.

Tasks: 1) to investigate the convergence problematic, processes and to select indicators;

2) to investigate the regions and the RHEI; 3) to compare the RHEI experience of Latvia and Lithuania.

Research methods: analysis of scientific research sources, comparison, systematization, generalization, descriptive statistic, correlation, and co-variation analysis.

Research sources and materials: information from the Central Statistical Bureau, the Ministry of Economics, the Ministry of Environmental Protection and Regional Development of the Republic of Latvia, documents, statistics and researches from Latvia, Lithuania and international organizations were used.

Research limitations: The comparable GDP NUTS3 regional data of Latvia and Lithuania are available only for the period 2010-2013; therefore, further comparison and analysis was based on the data from this period, while only the RHEIs of the particular country and their impact on the regional convergence of the

particular regions were analysed. The choice of the study destination on a regional and capital city perspective were not analysed due to the lack of data.

Theoretical background
1. Convergence, issues, research field and indicators in a RHEIs perspective

In order to determine the impact of the RHEIs in Latvia on the regional convergence and the corresponding economic development, it is necessary to understand the impact and the basics of the regional convergence.

The convergence (lat. convergere) is a gradual joining of indications (Baldunciks J., Pokrotniece K., 2007). The economists are still unable to precisely define the term of the convergence due to the complicity of its nature. The term of convergence is often used for comparison of countries as a tendency which indicates their convergence, e.g. the increase of wealth and the development, level of inflation, social policy etc. which can be attributed also to the regional convergence (Black J., 2009).

Since the 60s the interaction of the human-capital and the economic development was researched from a microeconomic (Odit M., 2010) and microeconomic perspective (Bouaissa M., 2009). The human-capital is based on competencies, knowledge etc., while most importantly on the work applied for creation of economic value. The education helps to create these values, thus it is believed to be one of the basic components of the human-capital (Bashir M., Iqbal M., Zaman K., 2011).

Two approaches can be observed in macroeconomics: R. Solow supplementary neo-classicism approach and endogenous growth theories (Solow, R., 1956; Mankiw G., Romer D., Weil D., 1992).

The new theoretical approach defined the aspects of centralisation and decentralization and explained the convergence in the regional economics (Krugman, P., 1991; Krugman, P., Venables, A., 1995). Researches affirmed the impact of the human capital on the GDP and thus

allowed to attribute the level of education as an indicator describing the level of human-capital. (Mankiw G. N., Romer D., Weil D. N., 1992).

The human capital is believed to be the main driver of economic development: a better educated workforce increases the return in the research and development, and ensures more flexible inclusion in the economic structure, thus increasing the economic growth. Answering the question on whether the expenditure for education increases the economic growth would simultaneously show the role of the RHEIs in the regional development and convergence.

The authors base their assumptions on foreign researches: the World Bank research on the connection between the expenditure for education and the GDP, which showed that for each dollar spent on the education the GDP increases on average by 20$; on the data from the USA which showed that the indirect effect of the acquired education ensures increased salaries and reduced level of poverty; as well as on a meta-analysis covering 29 researches on the connection between the GDP and the education (Benos N., Zotou S., 2014; Churchill S.A., Yew S.L., Ugur M., 2015; The World bank, 2017).

In Latvia, research has been conducted on the interrelation of the economic and educational indicators (Baumanis A., 2004; Ekmanis J., 2005; Steinbuka I. et al., 2006).

Based on the national and the international researches, authors conclude that the convergence in the economic analysis is a very broad concept and that the most precise indicator for its assessment is the GDP (Ingianni, A., 2007). Thereby for the further examination of the convergence problematique the authors chose as indicator the GDP and the costs for acquiring of the tertiary education which is also a an economical factor for producing changes to the human-capital. The expenses for the higher education are defined as the overall expenses which include both private and public expenditure. The private expenditure includes the

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household expenses - corresponding to students and their families, as well as other private expenditure which includes the expenses for education services by the private companies and non-governmental organisations. One of the impacting factors are the public expenditure for education.

2. Impact of HEIs on the regional convergence

It can be assumed that the following conditions apply in the area of the higher education.

The commitment of the regions and the HEIs is aimed at the practical use of the higher education as the tool for regional economic integration and convergence (Knight J., 2012).

Simultaneously the efforts of the regions are aimed at reaching development and increasing the wellfare of the citizens and the reduction of the unequality (Sinkiene J., Grumadaite K., 2014).

Thereby the HEIs which are located in these territories are closely connected with the convergence efforts and the higher education is serving as a tool to achieve that. The researchers state that first, this process is continuous and evolutionary, second, that there is an environment for the relationship between the HEIs and the diverse players of the region, third – the convergence as the resultative outcome of the described actions (Knight J., 2012).

The impact of the RHEIs is closely related to the interests of the national economy and human resources. The aim of the research is to bring the attention to the facts that the higher education in regions is represented by the RHEIs. Meanwhile, although the definition of the RHEI is not defined in any of the legal regulations of the Republic of Latvia, the term is understood as the HEIs which are located in a certain region. The region (lat. regio) is a land which is demarcated based on geographic, economic or political indicators (Baldunčiks, J., Pokrotniece, K., 2007).

Materials and methods

According the regulation of 2003, May 26 of the European Parliament and EC on the Nomenclature of territorial units for statistics about the creation of the (NUTS) the regulation (EC) No. 1059/2003 defines the regions of Member States based on the NUTS criteria. The NUTS hierarchy of classification defines the further composition of a country according to the NUTS 1, NUTS 2, and NUTS 3 scope. Each territorial division is coded with a single identificator and a specific name (EUROSTAT, 2011).

The authors noted that in Latvia the RHEI status is attributed to those institutions which are located outside Riga/Pieriga in any of the territorial entities: Kurzeme (LV003), Latgale (LV005), Vidzeme (LV008), Zemgale (LV009) and Latgale (LV009) (CSB, 2015). The six RHEIs of Latvia: University of Agriculture (LLU); Daugavpils University (DU); Liepaja University (LiepU); Rezekne Akademy of Technologies (RTA), Vidzeme University of Applied Sciences (ViA), Ventspils University College (VeA). RHEIs constitute approximately 22 % of the HEIs in Latvia (out of 33 HEIs - 17 are state established, 16 by legal persons) and there are approx. 11,590 students or 26 % of the overall number of students (IZM, 2016).

The aim of the research includes defining of the impact of the RHEIs on the regional convergence and investigating the Lithuanian experience. As a result the universities of the following districts of Lithuania were observed: Kaunas district (LT002) – 4 universities: Aleksandras Stulginskis University (ASU), Kaunas University of Technology (KTU), Lithuanian University of Health Sciences (LSMU); Klaipedas district (LT003) – Klaipeda University (KU); Siauliai district (LT006) – Siauliai University (ŠU); un Vilnius distric (LT00A) – 8 universities: Mykolas Romeris University (MRU), Lithuanian Academy of Music and Theatre (LMTA), Vytautas Magnus University (VDU), Vilnius University (VU), Vilnius Gediminas Technical University (VGTU),

Vilnius Academy of Fine Arts (VDA), The General Jonas Zemaitis Military Academy of Lithuania (LKA) un Lithuanian University of Educational Sciences (LEU). It can be concluded that there are six state funded RHEIs, which are located in three NUTS regional districts and thus influence their regional convergence. Meanwhile in Vilnius there are eight state run HEIs (MOSTA, 2015a).

Taking into account that only the territorial units with RHEIs were analysed, i.e. Kaunas country (LT002), Klaipėda county (LT003), Šiauliai county (LT003) and the capital city – Vilnius county (LT00A), thereby other counties were excluded from the research scope.

To assess the impact of the RHEIs on the regional convergence the authors carried out an analysis of the number of students in the regions and the capital in both Latvia and Lithuania.

According to the EUROSTAT, the annual costs (based on the price parity index) of the state owned and private HEIs per one student (ISCED 6-8) in 2013 were on average in Latvia - €4249 and in Lithuania - €3320 (LR SMM 2016). The costs per student of RHEIs and the HEIs in the capital city in Lithuania and Latvia were determined. In the case of Latvia the territories of Pierīga and Rīga were observed as a single unit due to the insignificant number of students in the former.

The acquired data on the students (in the regions of Latvia and Lithuania, the capital cities) was correlated with the corresponding GDP per person indicator in the regions as well as the capitals of both countries. The results were used for assessment of the RHEI impact on the regional convergence.

Research results and discussion

The annual fluctuation of GDP per person in the regions of Latvia and Lithuania (NUTS 3) from 2010 to 2013 show similarities (Fig. 1), nonetheless in Lithuania this indicator shows a more profound pattern.
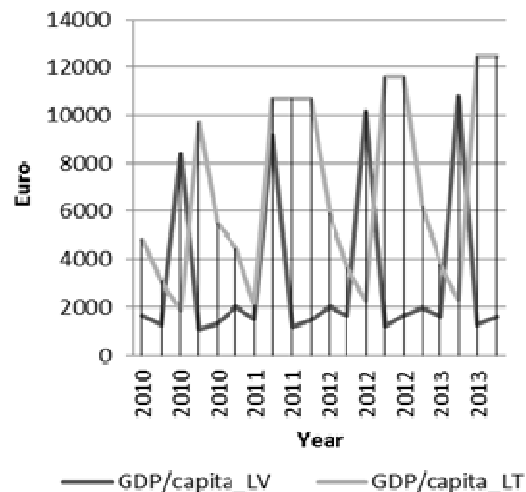
Source: author's calculations based on CSB

Fig. 1. **GDP in capita in the regions of Latvia and Lithuania (2010-2013), €**

The dispersion analysis was carried out to research this tendency. The dispersion analysis of the GDP per person in the regions of Latvia, showed that the p-value=0.553, thus with the 95 % probability the hypothesis, that the GDP per capita of the four NUTS3 groups are similar, may not be rejected.

Table 1

The homogenous sub-groups of Latvia NUTS 3 GDP/capita_4 Scheffe

NUTS_4	N	Subset for alpha=0.05	
		1	2
Vidzeme	4	1171.2850	
Latgale	4	1490.4475	
Zemgale	4	1498.0750	
Kurzeme	4		1913.5400
Sig.		.062	1.000

Means for groups in homogeneous subsets are displayed.

Since the p-value=0.01<0.05, then with 95 % probability the hypothesis, that GDP of all of the NUTS groups are similar, can be rejected. Meanwhile it can be seen (Table 1) that there are homogenous sub-groups in which the average values do not differ.

Different situation can be observed in the dispersion results of the GDP per capita in the regions of Lithuania. As a result, the p-

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value=0.532, then with a 95 % probability the hypothesis, that the groups of GDP per capita of the three NUTS3 are similar, cannot be rejected. Since the p-value=0.01<0.05, then with 95 % probability we can reject the hypothesis that the GDP per capita of all NUTS groups are similar, can be rejected. In addition the average values of the subgroups are significantly mutually different. In order to explain such situation, as well as to determine whether the RHEIs have a significant impact on the regional convergence, the RHEI annual expenses were determined as well as a correlation (Table 2) on the RHEI student expenditure for the higher education (since it is one of the human capital impact indicators) was carried out.

From the analysis of the theory the authors concluded that the determination of the economic differences of Latvia and Lithuania with the aim of creating a link between the costs of education in relation to the GDP increase, which would benefit the convergence, should be a relatively easy task. However the authors concluded that resources which are invested in the education as a factor, which influences development, are dependent from the development cycle of the corresponding state's economic. It is clear that the investment in the specific areas of education are also different for instance, the agrarian economics based education may have less significant impact on the GDP than the financial or industrial education, since education in such field would cost more and its impact is significantly greater. Unfortunately the authors had to acknowledge that there is a lack of precise data without significant variations depending on the source. For example it was not possible to carry out correlation for the following counties of Lithuania: Alytus County, Marijampolė County, Tauragė County etc. – where there are no RHEIs. The specific of Latvia – in each region there is a HEI. The possible impact of this situation is observable in the (Table 2) correlation. The research shows that the student cost correlation

with the GDP per capita within regions of Latvia (EXP_LVr un GDP_LVr) is statistically significant – 0.914. It is possible that this is due to specific regional coverage of HEIs.

In the meantime the data on student expenditure and the GDP in Lithuania showed that the data correlation coefficient is negative (-0.627) indicating of a fairly significant relationship. The reasons for this situation should be analysed because the given data is imprecise which was noted by N. Benos (2014). The research indicated multiple tendencies. Due to economic, demographic, migration and competition based reasons, the number of students has dwindled both in Latvia and Lithuania which thus affects the impact of RHEIs on the regions. For instance in Latvia in 2014./15. academic year the number of students has declined by 5-12 %, while the number of enrolled students has declined by 20 %(IZM, 2016 b). Taking into account that the new regional paradigm supports the idea of economic convergence, as it was pointed out by J.Black (2009), these tendencies indicate of possible threats for the regional development of Latvia – an opposite tendency – divergence. This can also be seen in the fact that part of the graduates of the RHEIs are employed in the capital cities (Rīga, Vilnius), while other part is affected by emigration – they pursue their career overseas. If in the Vilnius case the correlation between the GDP per person and student expenditure there is a limited but positive correlation (Table 2), then in Riga region (LV006) there is a limited-negative correlation (- 0.581), and possibly it is affected by both the dwindling of the number of students, as well as the concentration of HEIs in the Riga region.

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Table 2

Student cost correlation with the GDP per capital within regions of Latvia (2010-2013)

Correlations			
		EXP_R	*GDP_LV*
EXP_Riga	Pearson Correlation	1	*-0.581*
	Sig. (2-tailed)		*0.419*
	N	4	*4*
GDP_LV	Pearson Correlation	-0.581	*1*
	Sig. (2-tailed)	0.419	
	N	4	*4*
EXP_Vilnius	Pearson Correlation	1	*0.15*
	Sig. (2-tailed)		*0.483*
	N	24	*24*
GDP_Vilnius	Pearson Correlation	0.15	*1*
	Sig. (2-tailed)	0.483	
	N	24	*24*
EXP_LVr	Pearson Correlation	1	*.914***
	Sig. (2-tailed)		*0.00*
	N	24	*24*
GDP_LVr	Pearson Correlation	.914**	*1*
	Sig. (2-tailed)	0.00	
	N	24	*24*
EXP_LTr	Pearson Correlation	1	*-.627***
	Sig. (2-tailed)		*0.009*
	N	16	*16*
GDP_LTr	Pearson Correlation	-.627**	*1*
	Sig. (2-tailed)	0.009	
	N	*16*	*16*

**. Correlation is significant at the 0.01 level (2-tailed).
EXP – expenditure; LV –Latvia; LT –Lithuania; r-region.
Source: author's calculations based on MOSTA, 2015; LR SMM, IZM. 2014,2015;2016

In the same time the calculations show (Table 1), that in Latvia the NUTS3 regions are homogenous even when taking into consideration the differences of Kurzeme region. This means that the regional convergence is happening. The results of the Kurzeme region may be affected by both the RHEI (the functioning of VeA) as well as other factors, for instance, the existence of a significant infrastructure, which in this case is two national importance sea ports, which is a difference from other regions (except for Riga region). The Zemgale RHEI (LLU), as the largest of the RHEIs according to the number of students which is located near the capital city Rīga, in 2010.-2011. may have had a more significant impact on the development of the region in comparison with other RHEIs, as a significant GDP increase in the region is observable. The data analysis indicate that in 2013 the regional development convergence was not observable, while only in Vidzeme region there is a limited increase of GDP, while between the Riga and the regions divergence can be observable.

Similar situation is observable in Lithuania, where Vilnius County, in comparison with other regions demonstrates divergence – each year the GDP increases with a proportion 1:10 in favour of the Vilnius county. The authors conclude that increased amount of human and finance resources in the capital are a reason why the impact of RHEIs on the regional convergence is decreasing.

Conclusions

1) The convergence problem: the economic and social differences between the regions and the cities are increasing, and for the research of the regional convergence the scientifically approbated indicators – GDP and the annual expenditure in the public HEIs per student may be used.

2) The GDP per capita dispersion of the NUT 3 regions of Latvia and Lithuania is different, in Latvia it is homogenous with a slight difference in the case of Kurzeme region, while the regional groups in Lithuania on the contrary – are non-homogenous. The results of the research in both countries show a divergence for both capitals – Riga and Vilnius. This was indirectly indicated by the dispersion of the GDP per capita, as well as the student annual cost correlation with the

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GDP per capita of the region (in Latvia: -0.581).

3) The acquired results on the slightly limited and negative correlation of the Riga region with the study costs in the higher education, indicate that the impact of the RHEIs on the development of the region is not a determining factor and should be further investigated. In the meantime the Vilnius county data indicate of an existent convergence process in spite of the positive while weak student cost correlation with the regional GDP per capita. Therefore it should be further investigated why the RHEIs have a very limited impact on the regional convergence.

Bibliography

1. Baldunčiks, J., Pokrotniece, K. (2007). Svešvārdu vārdnīca. Rīga: Jumava, 931 lpp.

2. Baumanis, A. (2004). Izdevumi izglītībai un to nozīme sociāli ekonomiskajā attīstībā. *5.starptautiskā konference. Uzņēmējdarbības iespējas, problēmas un to risinājumi globalizācijas apstākļos. Rakstu krājums*. Biznesa augstskola Turība, Rīga. 21.-30.lpp.

3. Beeson, M. (2010). Asymmetrical Regionalism: Chine, Southeast Asia and Univen Development. East Asia, Vol.27 (4), pp.329-343.

4. Benos,N., Zotou, S. (2014). Education and Economic Growth: A Meta-Regression Analysis. World Development Vol. 64, December 2014, pp. 669–689. Retrieved: http://dx.doi.org/10.1016/j.worlddev.2014.06.034. Access: 05.03.2017.

5. Black, J., Hashimzade, N., Myles, N., Gareth, D. (2009). A Dictionary of Economics. (3.ed.) Oxford University Press, p.505.

6. Carrington, A. (2003). A Divided Europe? Regional Convergence and Neighborhood Spillover

7. Effects, *Kyklos* 56(3), pp.381-394.

8. CSB (2015). Par statistiskajiem reģioniem. Retrieved: http://www.csb.gov.lv/dokumenti/par-statistiskajiem-regioniem-28607.html. Access: 10.12.2015.

9. CSB (2016a). Darba samaksa. DSG13. Darba ņēmēju skaita sadalījums pēc darba ienākumiem pa vecuma grupām. Retrieved: http://data.csb.gov.lv/pxweb/lv/Sociala/Sociala__ikgad__dsamaksa/DS0130_euro.px/table/tableViewLayout2/?rxid=cdcb978c-22b0-416a-aacc-aa650d3e2ce0. Access: 10.01.2017.

10. CSB (2016b). Employees by Regions, Educational Attainment and Sex on October 31, 2014. Retrieved: http://www.csb.gov.lv/sites/default/files/nr_18_darba_samaksas_strukturas_apsekojuma_rezultati_2014_gada_16_00_lv_en.pdf. Access: 10.01.2017.

11. Churchill, S.A. Yew S.L., Ugur, M. (2015). Effects of Government Education and Health Expenditures on Economic Growth: A Meta-analysis. Monach London: Business School, p.26. Retrieved: https://business.monash.edu/__data/assets/pdf_file/0009/339399/effect_of_government_education_and_health_expenditures_on_economic_growth_a_meta-analysis.pdf. Access: 05.03.2017.

12. Ekmanis, J. (2005). Zinātnes attīstības tendences mūsdienu Latvijā. Stratēģiskās analīzes komisija. *Zinātniski pētnieciskie raksti. Zināšanu sabiedrību veidojot.* 2005. 2(3). Zinātne, Rīga. 30- 39.lpp.

13. European Union (2011). Regions in the European Union. Methodologies &Working papers.

14. Gorzelak, G. (2000). The dilemmas of regional policy in the transition countries and the territorial organization of the state. In: Petrakos G, Maier G, Gorzelak G (eds) Integration and Transition in Europe: The Economic Geography of Interaction. London: Routledge, pp.131–149.

15. IHEP (1998). Reaping the Benefits: Defining the Public and Private Value of Going to College, The New Millennium on Higher Education Costs, Pricing and Productivity. Washington, DC.: Institute for Higher Education Policy. ERIC Number: ED420256

16. Ingianni, A., Ždarek, V. (2007). Real Convergence in the New Member States: Myth or Reality? 6th EEFS Annual Meeting, p.26. Retrieved: https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=res_phd_2008&paper_id=128. Access: 20.12.2016

17. IZM (2014). Pētījums par studiju izmaksu koeficientu augstākajā izglītībā aktualizēšanu un priekšlikumu sagatavošana to konsolidēšanai. RTU. Retrieved: http://www.izm.gov.lv/images/izglitiba_augst/5_pielik_koefic.893.pdf. Access: 10.12.2016.

18. IZM (2016a). Pārskats par Latvijas augstāko izglītību 2015. gadā. Galvenie statistikas dati. Retrieved: http://www.izm.gov.lv/images/izglitiba_augst/Parskats_2015.pdf Access: 10.12.2016.

19. IZM (2016b). Publicēta studējošo skaita statistika 2015./2016. akadēmiskajā gadā. Retrieved: http://www.izm.gov.lv/lv/aktualitates/1496-publiceta-studejoso-statistika-2015-2016-akademiskaja-gada. Access: 20.12.2016.

20. Knight,J. (2012). A Conceptual Framework for the Regionalization of Higher Education: Application to Asia, in *Higher Education Regionalization in Asia Pacific. Implications for Governance, Citizenship and University Transformation*, (ed.) John N. Hawkins, Ka Ho Mok, Deane E. Neubauer. London: Palgrave Macmillan, p.215.

21. Krugman, P. (1991). Geography and Trade. Cambridge, MA: MIT Press., pp.85.

22. Krugman, P., Venables, A. (1995). Globalization and Inequality of Nations. Quarterly Journal of Economics, 110, pp. 857 – 880.

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23. LR SMM (Lietuvos Respublikos svietimo ir mokslo ministerija) (2016).Lietuvos svietimas skaiciais. (Lithuania Education Number) Retrieved: https://www.smm.lt/uploads/lawacts/docs/609_7f0c44639ea84f9fcfdfb645c1d80978.pdf. Access: 12.01.2017.

24. Mankiw, G.N., Romer, D.,Weil, D.N., (1992). Contribution to the Empirics of Economic Growth. The Quarterly Journal of Economics, vol. 107i2, pp. 407–437.

25. MOSTA (Mokslo ir studijų stebėsenos ir analizės centras) (2015a). (Lithuania Education

26. Number) 2015 studijos . Lietuvos Respublikos švietimo ir mokslo ministerija, Vilnius. Retrieved: http://mosta.lt/images/leidiniai/Lietuvos_svietimas_skaiciais_2015_Studijos.pdf. Access: 21.12.2016.

27. MOSTA (2015b). Effectiveness of higher education – overview and recommendations. Policy brief. Retrieved: http://mosta.lt/images/leidiniai/Effectiveness_of_higher_education_Policy_brief.pdf. Access: 12.01.2017.

28. NAP. (2012). Latvijas Nacionālais attīstības plāns 2014.-2020.gadam (NAP). http:/ Retrieved: /www.varam.gov.lv/lat/darbibas_veidi/tap/lv/?doc=13524. Access: 16.01.2017.

29. OECD (2016). Education at a Glance 2016: OECD Indicators, Paris: OECD Publishing, p. 508.

30. Regional Convergence in the Europen Union. Facts, Prospects and Policies. (2002). Cuadro-Roura, J.R., Parellada, M. (ed.) Berlin: Springer-Verlag, p.368.

31. Robertson, S., (2015). *Piketty, Capital and Education: A Solution to, or Problem in, Rising Social Inequalities? Special Issue on Piketty and Capital in the 21st Century*. Presented on panel Piketty and Education, CIES, Washington, March 7-13th. Submitted to British Journal of Sociology of Education, p.24. Retrieved: https://susanleerobertson.files.wordpress.com/2009/10/robertson-2015-piketty-education-solution-or-problem.pdf. Access: 16.12.2016.

32. Smas, L. (2009). Higher education institutions as drivers of regional development. Nordregio Working Paper 2009 (3). Hedin Sigrid (Ed.), p.46.

33. Thaman, K. H. (2008). The Role of Higher Education in Regional Development in Pasific Island Counries. with specific reference to the University of the South Pacific. Retrieved: https://portal.unesco.org/education/.../Konain_H_Thaman.pdf Access: 20.12.2016.

34. The World bank (2017). World Development Indicators. Retrieved: http://data.worldbank.org/data-catalog/world-development-indicators. Access: 05.03.2017.

35. Vilerts, K., Krasnopjorovs, O., Breķis, E. (2015). Izglītības ietekme uz algām Latvijā ekonomiskās krīzes laikā un pēckrīzes periodā (2006.-2012. gada datu vērtējums) Latvijas Banka (3). Retrieved: https://www.bank.lv/images/stories/pielikumi/publikacijas/petijumi/P_03_2015.pdf Access: 20.12.2016.

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