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SCENARIOS FOR REDUCING YOUTH UNEMPLOYMENT AND PROMOTING SUSTAINABILITY IN THE REGIONS OF LATVIA

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Abstract. In foreign studies Latvia is positioned as a "depressive" region in the year 2030, which will have an insufficient population of young people. Thus, Latvia as a country with a business-friendly environment will not be able to be competitive in relation to other European countries and the flow of investment will be at risk, as well as passed on other, more competitive and better developed regions in demographic terms. Therefore, it is pertinent to analyse the trends in youth employment in Latvia and to work on Latvia's economic development. There is necessity to promote human involvement in the labour market and to reduce their departure to foreign countries. It is important to draw attention to these challenges and to find answers to the questions: Which of the youth employment of Latvia's regions? Which of the scenarios are more focused on the interests of all parties involved? Which scenario will ensure the country's economic development? Four possible scenarios for promoting youth employment in Latvia were evaluated by experts. The experts were asked to assess the criteria for each scenario by hierarchy analysis. The most optimal scenario for promoting youth employment in Latvia in the experts' opinion is the scenario with EU participation. The main idea of the scenario is the effective use of European Union (EU) funding for youth mobility in the labour market organised by the State Employment Agency.

Keywords: youth unemployment, sustainability, the Analytic Hierarchy Process (AHP).

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1. Introduction

Youth unemployment is one of the most pressing economic and social problems confronting those countries whose labour markets have weakened substantially since 2008, following the near-collapse of worldwide financial markets. There is an element of "deja vu" around this development: youth unemployment first became a serious problem for industrialized countries during the 1980s. While labour markets were booming in the early part of this century, youth unemployment was still a concern (Bell, Blanchflower, 2010). The weakening of global recovery in the years 2012 and 2013 has aggravated the youth employment crisis when there were no free jobs with adequate requirements for people without education and professional skills (Grinevica, 2014; Išoraitė et al., 2014; Starineca; Voronchuk, 2015).

In the 3^{rd} quarter of 2013, in Latvia there were 27.1 thousand unemployed young people – 22.4% of the total number of unemployed persons aged 15-74. Labour Force Survey results compiled by the Central Statistical Bureau of Latvia indicate the most (86.9%) of them were aged 20-24 (Unemployment of Young..., 2013).

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In October 2015, the seasonally adjusted youth unemployment rate in Latvia was at 17.1%, in EU – 20%, but more than EU average, in Greece – 47.9%, Spain – 47.7%, Croatia – 43.1%. A lower seasonally adjusted youth unemployment rate than in Latvia and the EU is in Lithuania – 15.6% and Estonia – 15.1% (Youth Unemployment Rate..., 2015). Youth unemployment in Latvia in the year 2015 was lower than in 2013, but it is still a major challenge addressed to the government of Latvia. A series of studies starting with Sum (2000) in the U.S. and O'Higgins (2003) for the World Bank suggest that young people who have difficulty in their early integration into the world of work suffer lifelong "scarring" effects that diminish their resiliency and ability to thrive in a dynamic and demanding labour market (Youth Unemployment Challenge..., 2012).

According to the International Labour Organisation (2012), there is an extensive body of literature which demonstrates the central importance of qualifications on labour market outcomes. Young people with an education level below tertiary are more likely to be passed over by employers in favour of their more highly educated peers (Global Employment Trends..., 2012). Geography can also play a part in the decisions young people make. The areas in which people live can be damaging to their prospects of finding a job, especially if they are residing in neighbourhoods with many other unemployed people. The consequences of this pertain to the lack of information about jobs as a result of social networks (Green, White, 2007). The difficulty in finding employment as a means for securing a livelihood experienced by young people is an ongoing issue, along with the sense of frustration arising from failing to meet their work expectations. Indeed, youth unemployment has always been one of the major concerns of governments, and this is exhibited - among other things- by the rate of migration reported in different regions (Barbagelata, 2012).

Youth unemployment is of particular concern as people who become unemployed during their early working years may become demoralised, and people who fail to find a job after leaving full-time education may see a deterioration in their human capital and employment prospects, which could lead to social exclusion. At the same time, youth unemployment is problematic not only for those affected, but also for the economy as a whole. First, unemployment among young persons' implies unutilised labour potential and thus has a negative impact on potential growth. Given that populations in euro area countries will age in the years to come and that the labour force is expected to decline, it will become increasingly important to make full use of the potential of young people. Second, youth unemployment means that there is less labour input from those who, despite having less work experience than older workers, are supposed to improve production processes with their more up-to date and innovative expertise. Finding solutions to the youth unemployment problem requires both a rigorous analysis of its main causes, as well as a comprehensive assessment of policies that would improve the employability of young persons (Gomez-Salvador, Leiner-Killinger, 2008). The youth integration into the labour market is very important for young people's future options; also, it has a significant role in the country's revenues, competitiveness and development (Tvaronavičienė, 2014; Grinevica, Rivza, 2015; Shatrevich, Strautmane, 2015). In order to identify the most appropriate development scenario to involve young people into the labour market in Latvia, the Analytic Hierarchy Process (AHP) method established by American scientist Thomas L. Saaty was used.

The aim of the research is to identify the causes of youth unemployment and to establish the best scenario to reduce youth unemployment and to promote the sustainability of the regions of Latvia.

To achieve the aim, there are set the following tasks:

1) To evaluate the theoretical aspects from different authors to identify the main viewpoints and the practical approach to the methodology of the Analytic Hierarchy process (AHP);

2) To manage the evaluation with the experts from different sectors to find out the best scenario for reducing youth unemployment in the regions of Latvia.

The following materials and methods are used to achieve the aim and fulfil the tasks:

1) Theoretical framework of the research: the monographic and descriptive methods are used; the research is also based on scientific discussion regarding different author conclusions on the Analytic Hierarchy Process (AHP);

2) Research methodology: the methods of expert interviews, evaluations, discussion of the results and findings

are used to achieve the aim.

The authors made the expert interviews to gather information on their opinion of the best scenario for youth unemployment reduction opportunities. There were made interviews with an employer, young people who work in the private banking sphere, a business analyst, an expert from the Investment and Development Agency of Latvia and a representative from a local government.

2. Theoretical framework of the Analytic Hierarchy Process

The Analytic Hierarchy Process (AHP) is a general theory of measurement (Saaty, 1987).

The AHP, introduced by Thomas Saaty (1980), is an effective tool for dealing with complex decision making, and may aid the decision maker to set priorities and make the best decision. By reducing complex decisions to a series of pairwise comparisons, and then synthesizing the results, the AHP helps to capture both subjective and objective aspects of a decision. In addition, the AHP incorporates a useful technique for checking the consistency of the decision maker's evaluations, thus reducing the bias in the decision making process (Kasperczyk, Knickel, s.a.).

The AHP is a decision support tool which can be used to solve complex decision problems. It uses a multilevel hierarchical structure of objectives, criteria, subcriteria, and alternatives. The pertinent data are derived by using a set of pairwise comparisons. These comparisons are used to obtain the weights of importance of the decision criteria, and the relative performance measures of the alternatives in terms of each individual decision criterion (Triantaphyllou, Mann, 1995).

The AHP considers a set of evaluation criteria, and a set of alternative options among which the best decision is to be made. It is important to note that, since some of the criteria could be contrasting, it is not true in general that the best option is the one which optimizes each single criterion, rather the one which achieves the most suitable trade-off among the different criteria (Kasperczyk, Knickel, s.a.). Decision making, for which we gather most of our information, has become a mathematical science today (Figuera et al., 2005). It formalises the thinking we use so that, what we have to do to make better decisions is transparent in all its aspects. We need to have some fundamental understanding of this most valuable process that nature endowed us with, to make it possible for us to make choices that help us survive. Decision making involves many criteria and subcriteria used to rank the alternatives of a decision. Not only does one need to create priorities for the alternatives with respect to the criteria or subcriteria in terms of which they need to be evaluated, but also for the criteria in terms of a higher goal, or if they depend on the alternatives, then in terms of the alternatives themselves (Saaty, 2008).

Basically the AHP helps in structuring the complexity, measurement and synthesis of rankings. These features make it suitable for a wide variety of applications. The AHP has proved a theoretically sound and market tested and accepted methodology. Its almost universal adoption as a new paradigm for decision-making coupled with its ease of implementation and understanding constitute its success. More than that, it has proved to be a methodology capable of producing results that agree with perceptions and expectations T. Saaty describes the seven pillars of the AHP as follows:

- Ratio scales, proportionality and normalised ratio scales;
- Reciprocal paired comparisons;
- The sensitivity of the principal right eigenvector;
- Clustering and using pivots to extend the scale;
- Synthesis to create a one-dimensional ratio scale for representing the overall outcome;
- Rank preservation and reversal;
- Integrating group judgements (Saaty, 2001).

The strengths of the AHP have been a subject of substantial debate among specialists. The main strengths are mentioned as follows:

- The advantages of AHP over other multi criteria methods are its flexibility, intuitive appeal to the decision makers and its ability to check inconsistencies (Ramanathan, 2001). Generally, users find the pairwise comparison form of data input straightforward and convenient.
- Additionally, the AHP method has the distinct advantage that it decomposes a decision problem into its constituent parts and builds hierarchies of criteria. Here, the importance of each element (criterion) becomes clear (Macharis et al., 2004).
- The AHP method supports group decision-making through consensus by calculating the geometric mean of the individual pairwise comparisons (Zahir, 1999).
- The AHP is uniquely positioned to help model situations of uncertainty and risk since it is capable of deriving scales where measures ordinarily do not exist (Millet, Wedley, 2002).

3. Research results of the Analytic Hierarchy Process

Based on the expert interview results, there were made scenarios and criteria were selected. The experts chose the most important criteria groups for reducing youth unemployment.

According to the expert interview results, there were defined the following criteria groups with 5 criteria for each interest group:

• Individual interests:

- Job opportunities;
- Growth opportunities of individual;
- Competitiveness of individual's income in a given sector;
- Welfare provision for individuals' family;
- Needs of individual.

• Educational institution interests:

- Development of knowledge, innovation and skills;
- Investments in knowledge;
- Ensuring the transfer of knowledge to younger generations;
- Maintaining the number of students;
- Relations between educational institutions and employers.

• Entrepreneurs' interests:

- Qualification of workforce;
- Potential of investment and fundraising;
- Profit-making;
- Promotion of output/ service sales;
- Expansion of business.

• Local government interests:

- Promotion of employment;
- Improvement of the demographic situation;
- Attraction of funding for regional development;
- Promoting the development of enterprises (small and medium enterprises, self-employment, etc.);
- Cultural and social development.

• National interests:

- Sustainable regional development;
- Efficient use of resources;
- Increasing the gross domestic product by promoting agriculture, forestry, manufacturing and the development of other industries;
- Legislative alignment in the field of labour market regulation;
- Creation and maintenance of cooperation with other EU countries.

• European Union (EU) interests:

- Growth and competitiveness of the EU;
- Raising the level of public welfare;
- Social inclusion;

- Successful implementation of EU policies;
- Successful expenditure and absorption of EU structural funding.

The criteria hierarchy for reducing youth unemployment in the regions of Latvia was made after discussions with the experts. The methodology of the Analytic Hierarchy Process with the scenarios that were made for Latvia are also possible to use in other European region countries.

Four possible scenarios for reducing youth unemployment in the regions of Latvia were offered for the expert evaluation:

Scenario 1: The scenario for contributing to youth business development. The attraction of European Union funds for youth self-employment and business financing and the establishment of a special financial and administrative support programme at the institution "Altum".

Characteristics: it is important to create the interest of young people in entrepreneurship development and entrepreneurial promotion. At national level, the focus should be on raising funds and their volumes for start-up and self-employment to encourage young people to become entrepreneurs in Latvian rural areas and ensure the efficient use of national resources. It is also important to attract mentors and business angels and increase their interest in the promotion of these business support activities, providing feedback and benefiting all concerned parties. For example, in collaboration with the state joint-stock company "Latvian Development Financial Institution "Altum"" at the level of the regions in the country, fundraising opportunities for financing youth entrepreneurship should be ensured to increase efficiency gains from business support programmes. With these processes interacting, successful mutual cooperation among existing entrepreneurs, young entrepreneurs and regional government institutions will be built over several years.

Scenario 2: The scenario of cooperation between educational institutions and entrepreneurs. The interest of entrepreneurs to prepare competitive labour market specialists.

Characteristics: the collaboration of entrepreneurs with the institutions of professional and higher education is important to encourage young people into the labour market. The educational authorities in cooperation with entrepreneurs should make training programmes that are competitive in the labour market, within which the young people should be allowed to get practical training in a company. Close interaction between the educational and the private sectors will ensure specialists are prepared for performing specific operations and supply professionals in the industries where they are not enough.

Close cooperation between educational institutions and entrepreneurs will encourage individuals who have acquired higher education in Latvia to stay in the country. It is important to employ young people who were funded from the state's budget and prevent their departure. In the current situation, the state-allocated funding is used inefficiently, because after graduation many young specialists from different fields go to study and work to foreign countries. The legislative framework has to be amended, and students who have graduated in such study fields as medicine, internet technologies, engineering, etc. and in state-funded study programmes should continue their studies and work in the country after graduation for at least next 3 years. By paying taxes, the student will pay back the state's expenditures. Specialists who are prepared with that kind of principle, who have graduated with the state's financial support or personal support, completed practical training with an employer and got the possibility to work together with the employer with whom they were practicing, will significantly increase the country's tax revenues. Tax relief for entrepreneurs will promote the employment of youth.

Scenario 3: The scenario of collaboration between national institutions and entrepreneurs who employ young people.

Characteristics: only by ensuring successful interaction among the state, state-administered institutions, funding and human capital, it is possible to improve the economic situation in the areas of employment and demography. The demographic scope of the result of current economic situation in Latvia is moving to the downside; until 2014 the birth rate was lower than the mortality rate. Young people at working age are forced to travel abroad in search of a job or for studies in order to be able to provide a valuable life.

In Latvia the population of immigrants is not surprising, therefore there is no hope for the economy's recovery due to immigrants. There need to be a strong position how to "hold" the young people who have not departed to another country. One of the ways how to build a more positive environment for these young people is to review the legislative framework in relation to employment issues by promoting the willingness of employers to employ young people and encourage the change of attitude by employers towards the knowledge and professional skills by young people. Equipollent emphasis should be placed on close cooperation between national and regional authorities and entrepreneurs, with promoting knowledge-based economic development and efficient use of resources, especially in agriculture, industry and forestry, which is positioned as one of the ways to promote economic growth and preserve the human capital. A no less essential prerequisite is a decent wage level for young people, which is based on assessing their work quality.



Fig. 1. The criteria hierarchy for reducing youth unemployment in the regions of Latvia

Source: authors' construction

Scenario 4: The EU participation scenario. The EU interest in growth by contributing to the efficient use of EU funds in youth mobility activities organised by the State Employment Agency. Characteristics: since Latvia is an EU Member State, an important role in economic development is played by financial support amounts from the EU Structural Funds. The EU is interested in the EU Member States to be able to increase their revenue as a percentage of GDP and to improve the country's economic growth. It is important to promote the effective use of the allocated EU structural funds in the State Employment Agency by organising youth mobility events – the Latvian state can not afford inefficient and informal use of the resources, there is need to move to successful use of the potential of young people and promote their successful deployment. It is important in these events organised by the State Employment Agency, as well as in universities, to draw the attention of young people to the business opportunities and to inform them of business support programmes, their opportunities and financing possibilities. Also for future integration into the labour market, the contribution of organised youth

mobility arrangements, learning the subject matter courses such as the Russian, Latvian languages, project management, etc., which promotes the young people's competitiveness in the labour market, is important.

The developed criteria hierarchy for evaluation is shown in Figure 1. At the first level, an acute problem - youth unemployment reduction in Latvia - is defined. The second level is the criterion groups representing a variety of process-related interests; each group has defined five criteria. At the third level the possible scenarios for reducing youth unemployment in the regions of Latvia are presented.

With regard to the above-mentioned scenarios, the experts were asked to give an opinion by rating statements.

	Expert's	Spatial level of activity		
Code	Position			
Α	Analyst	National interests		
В	Senior Officer of the Enterprise Development Project Financing	EU interests		
C	Entrepreneur	Entrepreneurs' interests		
D	The deputy of local government	Local government interests		
Е	Private Banker	Individuals' (in this case, youth) interests		

Table 1. Information on experts who participated in hierarchy analysis

Source: authors' survey results

In order to assess young people's inclusion into the labour market, the experts were asked to appreciate 4 possible scenarios by using the AHP method. For the study, five experts who were asked to express their assessment of the above scenarios were invited (Table 1). The selection of experts was directed by the condition that they were linked with the labour market and represented the labour market's spatial levels. Information about the identity of the experts is confidential.

Each expert must firstly start with the evaluation of criteria groups, so for example, the comparison matrix of criteria groups evaluated by Expert A looks as follows:

Criteria groups	Individual interests	Educational institution interests	Entrepreneurs' interests	Local government interests	National interests	EU interests	Priority vector
Individual interests	1	8	1	6	6	7	0.41
Educational institution interests	0.125	1	0.333	0.25	0.25	0.25	0.03
Entrepreneurs' interests	1	3	1	4	5	6	0.31
Local government interests	0.167	4	0.25	1	1	1	0.09
National interests	0.167	4	0.2	1	1	1	0.08
EU interests	0.143	4	0.167	1	1	1	0.08
C.R.=	-0.08					Total =	1.00

Table 2. Comparison matrix of criteria groups (Expert A)

Source: authors' survey results

Priority vector coordinates is calculated by the following formula (Saaty, 2010):

$$x_{i} = \frac{(\prod_{j=1}^{n} \frac{W_{i}}{W_{j}})^{1/n}}{\sum_{i=1}^{n} (\left(\prod_{j=1}^{n} \frac{W_{i}}{W_{j}}\right)^{1/n})} = \frac{a_{i}}{\sum_{i=1}^{n} a_{i}}$$

Notations: x_i value i of the priority vector; $\frac{w_i}{w_j}$ element of pairwise comparison matrices; n – rank of pairwise comparison matrices;

Consistency Ratio (C.R.) is calculated by the following formula:

$$C.R.=\frac{C.I.}{R.I.},$$

where

$$\text{C.I.}=\frac{\lambda_{max-n}}{n-1}$$

R.I. – Random Index

A scheme for determining the priority vector (Saaty, 1980):

Filling in a matrix
forcomparing pairsCalculating the geometrical mean,
special vector componentDetermining the
priority vector
$$A_1$$
 A_2 A_3 A_1 M_1 A_1 M_1 A_1 M_1 M_1 M_1 M_1 M_1 M_1 M_1 M_1 M_1 A_2 M_2 M_2

where

$$S = \sum_{i=1}^{3} a_i$$

Notations:

A – comparable criteria groups of the second level;

W – evaluation of comparable elements;

a – average geometric mean for comparable elements;

x – priority vector for comparable elements.

A random read from the index table: for example, where n = 6, the R.I. = 1.25 (Table 3).

Table 3. Random Index (R.I.)

n	3	4	5	6	7	8	9	10
<i>R.I.</i>	0.5245	0.8815	1.1086	1.2479	1.3417	1.4056	1.4499	1.4858

Source: Alonso, Lamata, 2006

The Consistency Ratio (C.R.) must be less than 0.10, in some cases it may allow for 0.20 but not more. If the Consistency Ratio is beyond these boundaries, the experts have to once again evaluate and file a new pair wise comparison matrix. In our example, C.R. = -0.08, less than 0.10 and those Expert A job filling criteria for the group assessment matrix are correct.

The Consistency Ratio for all the experts is less than 0.20. It means that the results of the expert evaluation are correct and do not exceed the credibility limit.

In a similar way an expert filled out the rest of the individual criteria and the scenario evaluation table in relation to each of the criteria, a total of 37 tables. Priority vectors and C.R. were calculated for each table.

Then the individual expert assessments were gathered together, so for example, a group of evaluation criteria shown in the table and the calculated average priority values.

		Priority				
Criteria groups	Α	В	С	D	Е	vector average value
Individual interests	0.41	0.47	0.38	0.55	0.31	0.42
Educational institution interests	0.03	0.18	0.06	0.15	0.14	0.12
Entrepreneurs' interests	0.31	0.14	0.06	0.08	0.14	0.15
Local government interests	0.09	0.07	0.17	0.08	0.22	0.13
National interests	0.08	0.09	0.14	0.10	0.14	0.11
EU interests	0.08	0.04	0.22	0.03	0.04	0.08

Table 4. The concluding matrix of the priority vectors for criteria groups

Source: authors' survey results

By summarising the expert evaluations, there was obtained a criteria group from the experts' views (Table 4). The experts recognised the interests of individuals as the group most interested in youth employment, where the average priority vector value is 0.42. This rating is logical, because the young people themselves are the ones who are the most passionate about youth employment promotion, which significantly affects the individual's ability to participate in society, to build a future and career, as well as to exist. The other interested parties are associated with young people and their inclusion into society, and in a sense are the beneficiaries of promoting youth employment; it affects their welfare, profit, competitiveness and so on.

The next most interested part, according to the results of expert evaluation, represents the interests of entrepreneurs, and the average priority vector value for this group is 0.15; the experts evaluated the interests of local government relatively lower, as the average priority vector is 0.13. The interests of educational institutions and local government were evaluated as irrelevant compared with the interests of individuals - the average priority vector value of the educational institutions– 0.12 and local government – 0.11.

The EU interests are evaluated by the experts as insignificant interests, where the priority vector value is 0.08. According to the results of Expert C, the EU interests are second important interests (average priority vector value 0.22). According to the results of Expert A, they consider that the entrepreneur's interests are second important than the interests of the nation, local government, EU and educational institutions, where the global priority vector value is 0.31. In general by evaluating the opinions by the experts, Expert A evaluated the inter-

ests of entrepreneurs with conclusive predominance (average priority vector value 0.31), while the interests of entrepreneurs were evaluated by Expert C as the least important (average priority vector value 0.06).

Expert E evaluated the local government interests as the second most essential interests (average priority vector value 0.22), while the other experts evaluated those interests as insignificant relative to the other interest groups. The next step in the hierarchy analysis is evaluation of the priority vector value calculation. The priority vector allows considering the optimal solution to various problems. It shows the priority vector values in relation to the overall objective (Pelse, 2007).



Fig. 2. Selection of the most appropriate scenario for promoting youth employment in Latvia by expert views

Source: authors' survey results

According to Figure 2, Expert A, who holds the analyst position and represents the interests of the state evaluated Scenario 4 – the EU's participation as the most optimal scenario, with the priority vector value of 0.39; also Expert C, who is a long-time entrepreneur and represent the interests of entrepreneurs, acknowledged Scenario 4 of these scenarios as the most optimal, with the priority vector value of 0.37. Expert B, who is operating the business development projects in the area of financing and represents the interests of the European Union, assessed Scenario 3 – the scenario of collaboration between national institutions and entrepreneurs – as an optimal scenario; the priority vector value is 0.31. Expert E, who holds a private banker's position and represents the interests of young people (individuals interests), recognized Scenario 2 as optimal; the priority vector value is 0.29. However, Expert D who holds a local government deputy position and represents the local government interests rated Scenario 1 – the scenario for contributing to youth business development – as the most optimal variant.



Fig. 3. Four possible scenarios for promoting youth employment in the regions of Latvia in the experts' opinion

Source: authors' survey results

According to the research results, an optimal scenario is Scenario 3 - the scenario of collaboration between national institutions and entrepreneurs who employ young people, which includes and highlights the importance of successful interaction among the state, state-administered institutions, funding and human capital, for improving the economic situation in the areas of employment and demography. It means that the majority of the experts thought that the best way how to promote youth employment in the regions of Latvia was to develop interaction between state and individuals. For Scenario 3, the average value of priority vector value is 0.27, with the minimum priority vector value of 0.21 and the maximum priority vector value of 0.31. The second best scenario for promoting youth employment in the regions of Latvia is Scenario 2 - the scenario of cooperation between educational institutions and entrepreneurs, with the interest of entrepreneurs to prepare competitive labour market specialists. For Scenario 2, the average value of priority vector value of 0.24, the minimum priority vector value of 0.16 and the maximum global priority of 0.32. Scenario 1 and Scenario 4 are rated similarly. Scenario 1 is rated as one of the worst scenarios - the scenario for contributing to youth business development. The main conception of the scenario: the attraction of European Union funds for youth self-employment and business financing and the establishment of a special financial and administrative support programme at the institution "Altum". The minimum priority vector value is 0.16 and the maximum priority vector value is 0.33. Scenario 4 is rated as second of the worst scenarios- the scenario with EU participation, which highlights the importance of the efficient use of EU funds in youth mobility activities organised by the State Employment Agency. The experts did not rate it as the most optimal scenario. The main idea of the scenario was directed to the financial funding for youth business development by creating a new support programme which is responsible for funding and administrative support. The minimum priority vector value is 0.13 and the maximum priority vector value of 0.39 (Figure 3). In general, by evaluating the results of the scenarios, the authors conclude that there is no marked difference in the significance of the scenarios; they vary in terms of priority vector value from 0.23 to 0.27.

Conclusions

The Analytic Hierarchy Process helps to analyse the subjective and objective evaluation measures. The AHP provides a useful mechanism for choosing the alternatives by evaluating several groups of criteria. That methodology helps to summarize and choose one of the scenarios and helps in decision making, when several scenarios are possible to establish. The Analytic Hierarchy Process helps to crystallize the most optimal scenario for dealing with the proposed problem. The youth unemployment problem is one of the central focus for the European Union to deal with, because in some European region's countries there is very high youth unemployment, especially in Greece, Spain, Croatia. According to the survey results, presently the most effective scenario for reducing youth unemployment in the regions of Latvia would be Scenario 3 with the collaboration between national institutions and entrepreneurs who employ young people; the average value of priority vector value is 0.27. The main idea for the scenario is the successful interaction among the state, state-administered institutions, funding and human capital, it is possible to improve the economic situation in the areas of employment and demography. The scenarios mentioned in the paper are also adjustable to other European region countries such as Greece, Spain, Croatia, where youth unemployment are higher than in Latvia and the EU average.

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References

Alonso, L. A., Lamata, M. T. 2006. Consistency in the Analytic Hierarchy Process: A New Approach, International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, Vol. 14, No. 4, 445- 459.

Barbagelata, H. H. 2012. Youth Unemployment and Education. Youth Unemployment and Joblessness: Causes, Consequences, Responses, *Cambridge Scholars Publishing*, 3-10.

Bell, D. N. F., Blanchflower, D. G. 2010. Youth Unemployment: Deja Vu? Institute for the Study of Labour, IZA Discussion Paper No. 4705, Germany, Bonn, 1- 58.

Bhusan, N.; Rai, K. 2004. Applying the Analytic Hierarchy Process, Strategic Decision Making, Springer, 11-21.

Global Employment Trends for Youth 2012. 2012. International Labour Organisation, Geneva, DOI: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_180976.pdf

Gomez-Salvador, R., Leiner-Killinger, N. 2008. An Analysis of Youth Unemployment in the Euro Area. European Central Bank, Occasional Paper Series No. 89, Eurosystem, 1-45.

Green, A. E., White, R. J. 2007. Attachment to Place: Social Networks, Mobility and Prospects of Young People, Warwick University, Joseph Rowntree Foundation, 1-107.

Grinevica, L. 2014. Analysis of Theoretical and Practical Aspects of Youth Long-term Unemployment in Latvia. Research for Rural Development 2014: 20th Annual International Scientific Conference, Latvia, Jelgava: Latvia University of Agriculture, 258- 264.

Grinevica, L.; Rivza, B. 2015. Youth Long-term Unemployment Problems and Integration into the Labour Market, Nordic View to Sustainable Rural development, Proceedings of the 25th NJF Congress, Latvia: Riga, 462-467.

Išoratė, M.; Steiblienė, L.; Mečėjienė, G. 2014. If obtained professional competences are suitable for sustainable entrepreneurship: case of Vilnius University of Applied Sciences, *Entrepreneurship and Sustainability Issues* 1(4): 239–246. DOI: http://dx.doi.org/10.9770/ jesi.2014.1.4(6)

Kasperczyk, N.; Knickel, K. [s.a.] The Analytic Hierarchy Process, DOI: http://www.ivm.vu.nl/en/images/mca3_tcm53-161529.pdf

Macharis, C.; Springael, J.; De Brucker, K.; Verbeke, A. 2004. Promethee and AHP: The Design of Operational Synergies in Multicriteria Analysis, Strengthening Promethee with Ideas of AHP, *European Journal of Operational Researc*, 307–317.

Millet, I.; Wedley, W. C. 2002. Modelling Risk and Uncertainty with the Analytic Hierarchy Process. *Journal of Multi–Criteria Decision Analysis*, 97–107.

Pelse, M. 2007. Assessment of Possible Scenarios for Farmers' Social Capital Development, Proceedings of the Latvia University of Agriculture, Latvia: Jelgava, 19 (314), 89-98.

Ramanathan, R. 2001. A Note on the use of the Analytic Hierarchy Process for Environmental Impact Assessment. *Journal of Environmental Management*, 27–35.

Saaty T.L. 2010. Principlia Mathematica Decernendi: Mathematical Principles of Decision Making. RWS Polications, 126-130.

Saaty, R. W. 1987. The Analytic Hierarchy Process- What it is and how it is used, Great Britain: Pergamon Journals Ltd., *Market Modelling*, Vol. 9., No. 3-5., 161-176.

Saaty, T. L. 1980. The Analytic Hierarchy Process. New York: Mc Graw-Hill, DOI: http://www.dii.unisi.it/~mocenni/Note_AHP.pdf

Saaty, T. L. 2007. Time Dependent Decision-making; Dynamic Priorities in the AHP/ANP: Generalizing from Points to Functions and from Real to Complex Variables, *Mathematical and Computer Modelling*, USA: Elsevier Ltd., Vol. 46., Issues 7- 8, 860 – 891.

Saaty, T. L. 2008. Decision Making with the Analytic Hierarchy Process, Services Sciences, Vol.1., No.1., 83-98.

Saaty, T. L.; Peniwati, K.; Shang, J. S. 2007. The Analytic Hierarchy Process and Human Resource Allocation: Half the Story, Mathematical and Computer Modelling, USA: Elsevier Ltd., Vol. 46., Issues 7-8, 1041-1053.

Saaty, T. L.; Vargas, L. G. 2001. Models, Methods, Concepts and Applications of the Analytic Hierarchy Process, Kluwer, Dordrecht.

Shatrevich, V.; Strautmane, V. 2015. Industrialisation factors in post-industrial society, *Entrepreneurship and Sustainability Issues* 3(2): 157-172. DOI: http://dx.doi.org/10.9770/jesi.2015.3.2(4)

Starineca, O.; Voronchuk, I. 2015. Peculiarities of young specialists on labour market: Case of Latvia, *Entrepreneurship and Sustainability Issues* 2(4): 198 - 208. DOI: http://dx.doi.org/10.9770/jesi.2015.2.4(3)

The ESPON 2013 Programme, 2008. Territorial Dynamics in Europe. Trends in Population Development. Territorial Observation No.1., European Union, European Regional Development Fund, Belgium, 1-15.

Triantaphyllou, E.; Mann, H. S. 1995. Using the Analytic Hierarchy process for Decision Making in Engineering Applications: Some Challenges. *International Journal of Industrial Engineering: Applications and Practice*, Vol.2., No.1., 35-44.

Tvaronavičienė, M. 2014. If industrial sector development is sustainable: Lithuania compared to the EU, *Entrepreneurship and Sustainability Issues* 1(3):134–142. DOI: http://dx.doi.org/10.9770/jesi.2014.1.3(2)

Unemployment of Young People still a Major Issue in Latvia. 2012. OECD Better Policies for Better Lives, DOI: http://www.csb.gov. lv/en/notikumi/unemployment-young-people-still-major-issue-latvia-39293.html

Youth Unemployment Challenge and Solutions. What Business Can Do Now. 2012. Manpower Group, DOI: http://www3.weforum.org/ docs/Manpower_YouthEmploymentChallengeSolutions_2012.pdf

Youth Unemployment Rate in EU Member States as of October 2015 (Seasonally Adjusted). 2015. The Statistics Portal, DOI: http://www.statista.com/statistics/266228/youth-unemployment-rate-in-eu-countries/

Zahir, S. 1999. Clusters in Group: Decision Making in the Vector Space Formulation of the Analytic Hierarchy Process. *European Journal of Operational Research*, 620-634.

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