

DETERMINANTS OF DIFFERENTIATION FOR SELECTED COUNTY LABOUR MARKETS IN PODLASKIE VOIVODSHIP – THE APPLICATION OF THE SCENARIO METHOD

Anna Kononiuk

Alicja Ewa Gudanowska

Białystok University of Technology, Poland

Abstract. *The main aim of the paper is to present the possibilities of scenario method use for the identification of the factors determining a different situation in selected county labour markets in Podlaskie Voivodship, Poland. The novelty posited by the authors of the paper consisted in the application of the qualitative method based on the intuitive logic school of scenario construction for the county labour markets analysis. The following pairs of poviats were subjected to the case study: Hajnowski and Bielski, Grajewski and Wysokomazowiecki, Suwalski and Sejneński. The selection of the experts of the presented case study followed the rules of researcher triangulation. The expert team consisted of representatives of labour market institutions, local government units and enterprises, which allowed for a multifaceted view on the analysed issues. The scenario method was preceded by the STEEPVL analysis. The main problem issue undertaken during the case study analysis was the identification of factors affecting the development of selected poviats and the assessment of these factors in terms of validity and uncertainty. The STEEPVL analysis and the scenario method were implemented for poviats, which in pairs of poviats occupy lower positions in the ranking of poviats in the region. The research methods applied by the authors of the paper were literature review, a case study, STEEPVL analysis and the scenario method.*

Keywords: *country labour market, Podlaskie Voivodship, scenario method, STEEPVL analysis.*

Introduction

The research presented in this paper is a part of the project entitled “Reasons for differentiation of county labour markets in Podlaskie voivodeship” commissioned by the Voivodship Labour Office in Białystok, in which the authors took part as coordinators of qualitative investigation (Glińska et al., 2017). The study was carried out in the period: July-August 2017 by researchers from the Faculty of Engineering Management of Białystok University of Technology. The main goal of the project was to determine the reasons for the diversification of poviat labour markets in the Podlasie region, Poland. The methodology of the research comprised five main stages and was based on the methodological

triangulation principle which aims at the application of both quantitative and qualitative methods for the examining of phenomena in order to maintain research validity (Kononiuk & Nazarko, 2014).

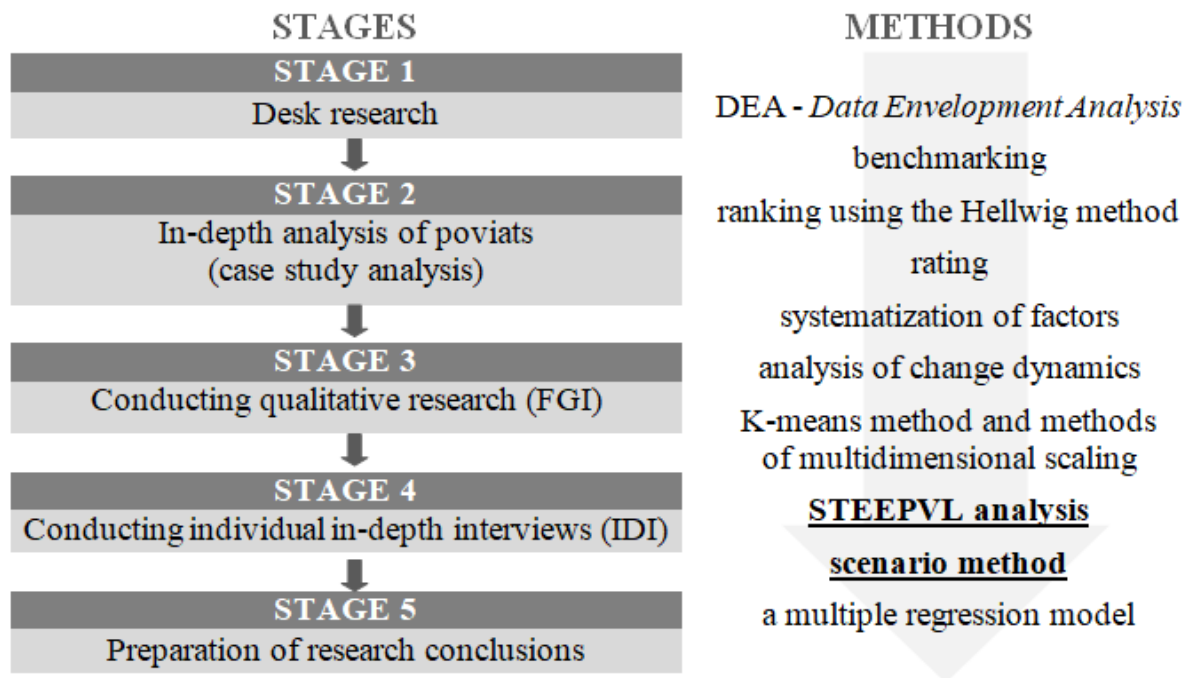


Figure 1. **Methodology and supporting methods used in the project “Reasons for differentiation of county labour markets in Podlaskie voivodeship”** (source: own study based on Glińska et al., 2017)

The research stages consisted of desk research analysis, in-depth case study analysis of selected pairs of poviats (Bielski and Hajnowski, Wysokomazowiecki and Grajewski, Sejnencki and Suwalski), as well as the qualitative research cycle (FGI, IDI) with representatives of employers, business environment institutions and local government. The desk research analysis was focused on the examination of legal regulations, programmes and development strategies of the poviats in terms of activities supporting the labour market and development of entrepreneurship, as well as the indication of good practices in this area. Case study analyses were based on an in-depth analysis of poviats with similar potential, and at the same time having a diversified situation on the labour market in terms of unemployment and the number and quality of jobs, as well as demonstrating factors affecting the success of some poviats and barriers to the development of others. In the next phase of the research process, qualitative research was carried out. It comprised two phases, namely: FGI – Focus Group Interview and IDI – Individual In-depth Interview with representatives of labour market institutions, local government units and employers' organizations. 41 experts participated in the study. Each from poviats was represented by groups

similar in size i.e. six, seven or eight people. A percentage of each group representing the poviats in the whole examined group is presented in Figure 2.

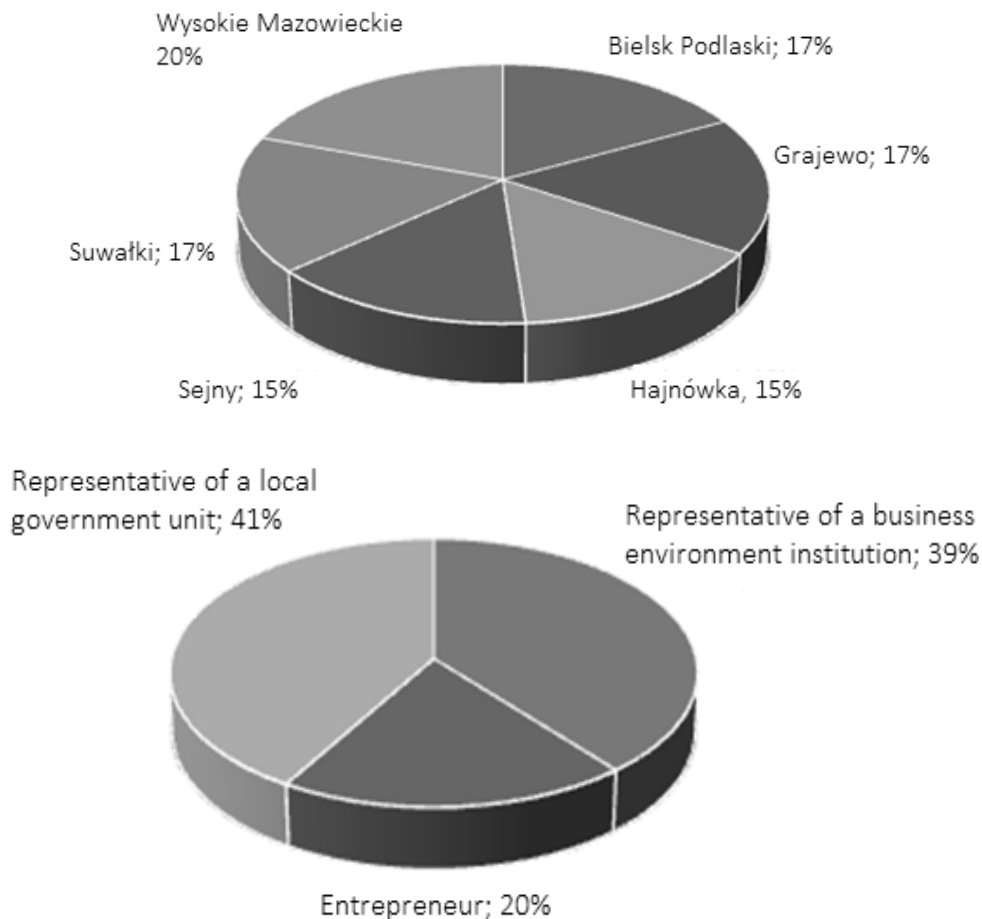


Figure 2. Structure of the surveyed respondents in the project “Reasons for differentiation of county labour markets in Podlaskie (source: Glińska et al., 2017)

As a part of qualitative research conducted in respect of entrepreneurs, there were carried out:

- 5 group interviews (with the representatives of counties: Bielsk Podlaski, Grajewo, Hajnówka, Sejny, Suwałki);
- 6 individual interviews (with the representatives of counties: Bielsk Podlaski, Grajewo, Sejny, Wysokie Mazowieckie).

However, with reference to Local Government Units, there were carried out:

- 1 group interview (with the representatives of counties: Grajewo, Hajnówka, Wysokie Mazowieckie, Suwałki);
- 8 individual interviews (with the representatives of counties: Grajewo, Bielsk Podlaski, Sejny).

This paper focuses mainly on the results of group interviews which enabled scenarios to be built for selected powiat labour markets on the basis of the opinion of entrepreneurs and business environment units, through the implementation of STEEPVL analysis and the scenario method. The results of individual interviews enabled the authors to identify the main reasons for differentiation of county labour markets.

Scenario method and STEEPVL analysis – a brief overview

The scenario method consists in constructing a vision of the future based on the involvement of experts, taking into account the exact knowledge and understanding of the factors shaping the studied phenomena. (Nazarko, 2013a; Kononiuk & Nazarko, 2014).

In most of the key literature items in the scope of the scenario method, the focus was on adapting this method to the needs of strategic management in enterprises (O’Keefe & Wright, 2010; Gierszewska & Romanowska, 2009; Perechuda & Sobińska, 2008; Lindgren & Banhold, 2003; van der Heijden et al., 2002; Ringland, 1998; van der Heijden, 1996; Schwartz, 1991), ignoring its significance in foresight research understood as the consensus of potential stakeholders regarding desirable developmental vision of the powiat. The concept presented in the paper corresponds to the current trends in qualitative research and is part of the intuitive logic school of scenario building. According to G. Wright and G. Bowman, the school of intuitive logic favours the understanding of the processes that shape the future, and also influences the ways of thinking of team members implementing the scenario method (Bowman et al., 2013). In the work of G. Bowman et al. the conclusions from the scenario structure based on the school of intuitive logic with the adaptation of ready-made scenarios for the needs of regional policy were presented. According to Bowman et al. the scenario structure based on the intuitive logic school favoured a creative debate among the participants of the process, while the adaptation of ready-made scenarios – because of the lack of a sense of participation in scenario building – favoured undermining their credibility by stakeholders, making the whole process of creating them less effective (Bowman et al., 2013).

The scenario method in the presented project was preceded by the STEEPVL analysis, which is a checklist of factors: social, technological, economic, ecological, political, values and legal factors that affect the development of a given research area. The multidimensionality of the STEEPVL analysis allows to capture the potential driving forces of scenarios that could be neglected in the case of traditional PEST analysis. In addition to defining driving forces that create development scenarios, STEEPVL analysis is used, among others, to identify unprecedented events breaking trends (the so-called “wild cards” and to enrich

the complexity of the SWOT analysis (Nazarko & Kędzior, 2010; Kononiuk, 2010; Nazarko, 2013b; Nazarko & Kuźmicz, 2017).

Methodology of STEEPVL analysis in the project

The main problem issue undertaken during the case study analysis was the identification of factors affecting the development of selected poviats and the assessment of these factors in terms of importance and uncertainty.

The task of the experts was to determine:

1. What social factors influence the development of the poviat?
2. What technological factors influence the development of the poviat?
3. What economic factors influence the development of the poviat?
4. What ecological factors influence the development of the poviat?
5. What political factors influence the development of the poviat?
6. What values influence the development of the poviat?
7. What legal factors influence the development of the poviat?

In the first step, the STEEPVL analysis was carried out for poviats, which in pairs of poviats occupy lower positions in the ranking of poviats prepared in the intermediate stages of the study, i.e. for Sejnencki, Hajnowski and Grajewski poviats.

The group of experts were representatives of the Suwałki and Sejny poviats, representatives of the Hajnówka and Bielsk Podlaski poviats as well as representatives of Grajewo poviat, respectively.

The STEEPVL analysis was carried out on the basis of brainstorming session results carried out by the experts representing pairs of poviats, or a single poviat, which took place in the case of the Grajewski poviat. The STEEPVL analysis was moderated by the authors of this paper.

A total of nine experts, including two representatives of the Poviat Labor Office in Sejny, a representative of the Poviat Labor Office in Suwałki, a representative of the Suwałki Special Economic Zone, four representatives of training institutions and business support institutions (such as "ARES" SA in Suwałki, the Youth Education and Work Centre in Suwałki and the Suwałki Teacher Training Centre in Suwałki) and one business representative representing Inter Cars S. A., a Suwałki company, were included in the group developing the STEEPVL analysis for the Sejny poviat.

The group developing the STEEPVL analysis for the Bielsk Podlaski poviat formed a total of seven experts from the Hajnówka and Bielsk Podlaski poviats, including one representative of the Poviat Labor Office in Bielsk Podlaski, one representative of the Poviat Labor Office in Hajnówka, one representative of business environment institutions from the Association for Dissemination of Knowledge and Innovation and four business representatives representing such

enterprises as: the Factory of Handles BISON-BIAL S. A., Przedsiębiorstwo Drogowo-Mostowe MAKSBUD Sp. z.o.o, Pronar Sp. z.o.o and the Furniture Factory “FORTE” branch in Hajnówka.

Due to the lack of representatives of the Wysokomazowiecki powiat, the least numerous group of experts were representatives of the Grajewski powiat. In the process of identifying STEEPVL analysis factors affecting powiat labour markets, three experts were involved, including one representative of the Powiat Labour Office in Grajewo and two representatives of business environment institutions representing the Supraregional Training and Examination Consortium.

It should be emphasized that the boundaries between the factors are fuzzy, hence it is possible to classify factors into more than one category. Sometimes it is also difficult to clearly classify a factor into a particular category.

As a result of the research procedure, a total of 35 factors influencing the development of the local labour market in the Sejny powiat, 30 factors influencing the development of the local labour market in the Grajewski powiat and 41 factors affecting the development of the local labour market in the Hajnowski powiat were identified.

The selection of experts for the study fulfilled the principle of the triangulation of researchers consisting in the selection of experts representing various professional milieus in order to ensure higher quality of the research (Kononiuk & Nazarko, 2014).

Methodology of scenario analysis in the project

The methodology of scenario analysis was based on the intuitive logic school of scenario building which assumes that scenarios are prepared on the basis of experts’ experience and intuition. The correspondence between STEEPVL analysis and the scenario method is presented in Figure 3.

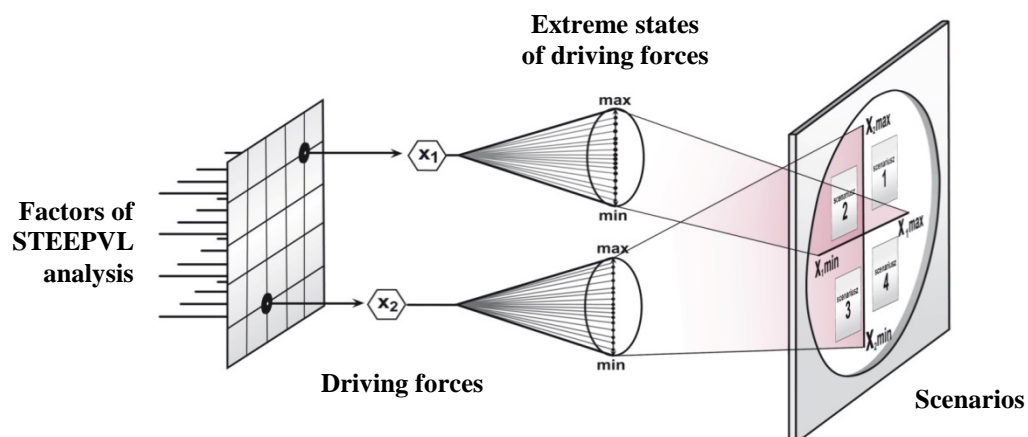


Figure 3. Correspondence between STEEPVL analysis and the scenario method (source: Kononiuk & Nazarko, 2014)

Out of the identified factors of STEEPVL analysis, the experts taking part in the study, selected – on the basis of rankings of importance and uncertainty – two driving forces whose extreme states form four qualitatively different scenarios.

Hence, in the next stage of the research process, experts participating in the study were asked to prepare a ranking of factors in terms of importance and uncertainty (adopting a five-grade scale of assessments). The STEEPVL factors posited by the experts and the results of expert assessments, for one out of the three analysed poviats, (Hajnówka powiat) are presented in Table 1.

Table 1 **STEEPVL analysis for the Hajnówka powiat** (source: Glińska et al., 2017)

Factors	Name of the factor	Scale of importance	Scale of uncertainty
Social	Ageing society (soc 1)	2	2
	The region’s attractiveness for specialists due to Białowieża Primeval Forest (soc 2)	2	2
	Emigration among young people (soc 3)	5	4
	Social inactivity (soc 4)	2	3
	Professional development (soc 5)	4	4
	Quality of education (soc 6)	4	2
Technological	Transport and logistics accessibility (tech 1)	5	5
	Research and development infrastructure (tech 2)	4	4
	Energetic infrastructure (tech 3)	5	3
Economic	Non-refundable financial contribution (econ 1)	3	1
	Relations with the neighbouring countries (econ 2)	3	3
	Attractiveness of the tourist industry (econ 3)	3	3
	Identification of a workplace with the place of origin (econ 4)	2	2
	Exchange of information on the local professionals market with the Scientific and Research Centre at BUT Forestry Faculty (econ 5)	2	1
	Accessibility to large-area investment areas (econ 6)	4	3
	Number of forest- and agriculture-based processing enterprises (econ 7)	3	3
	Number of EU programmes dedicated to large enterprises (econ 8)	3	3
	Network of industrial cluster cooperation (econ 9)	5	5

	Inhabitants; income levels (low) (econ 10)	5	3
	Salary levels (econ 11)	5	3
	Narrow specialisation of the Scientific and Research Centre at BUT Forestry Faculty (econ 12)	5	3
	Concentration of tourism development within Białowieża (econ 13)	4	4
	Rich offer of overseas jobs (financially competitive) (econ 14)	3	2
	The Suwałki Special Economic Zone in Hajnówka (econ 15)	3	2
	Number of international investments (lack) (econ 16)	5	3
	Number of entrepreneurship incubators (econ 17)	4	4
	Access to EU projects e.g. „Settlement voucher” (econ 18)	1	1
Ecological	Air quality (ecol 1)	3	3
	The region’s natural capacity (Białowieża Primeval Forest) – attraction and conflict (ecol 2)	2	2
Political	Legal situation of Białowieża Primeval Forest (uncertainty) (pol 1)	4	4
	Borderland traffic (lack) (pol 2)	4	3
	Development strategy of precious natural areas (pol 3)	2	1
	Politicising the conflict with regard to Białowieża Primeval Forest (pol 4)	2	1
Values	Openness towards new experiences (v 1)	4	3
	Tendency to preserving traditions (v 2)	2	2
	Enterprises’ organisational culture (v 3)	5	2
Legal	Legal stability (no – legal instability) (l 1)	3	2

The experts taking part in the study brainstormed six social factors, three technological factors, eighteen economic factors, two ecological factors, four political factors, three factors related to values and one legal factor.

From the experts' ranking of factors in terms of importance and uncertainty, two key factors shaping the local labour market in the Hajnowski powiat were identified: transport and logistics accessibility (tech 1) and network of industrial cluster cooperation (econ 9) (Figure 4).

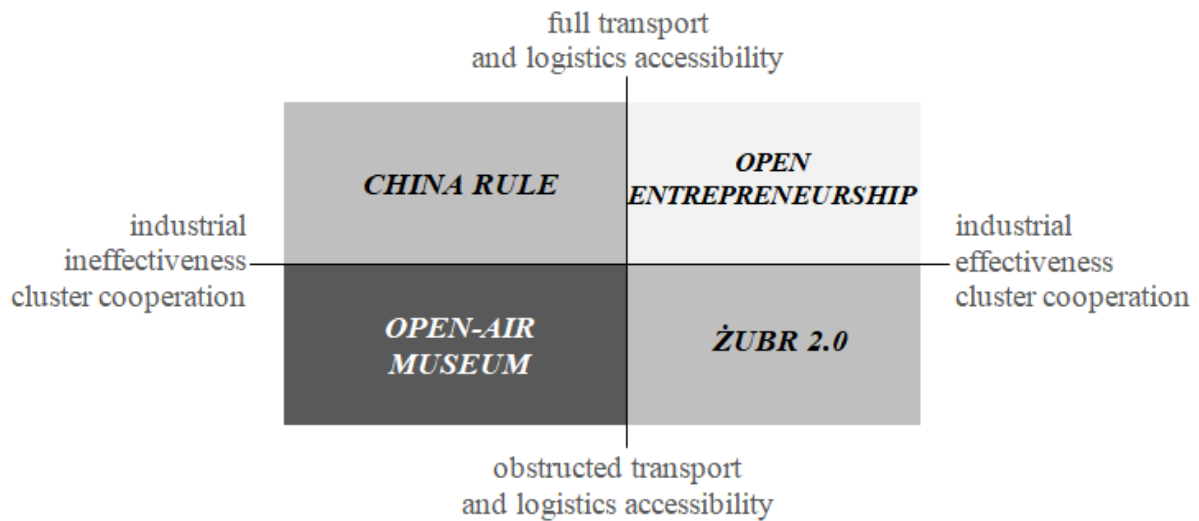


Figure 4. **Four scenarios of development for Hajnowski Poviát**
(source: Glińska et al., 2017)

The system of extreme values of two key factors allowed the experts to create four development scenarios of the Hajnowski poviát: „Open Entrepreneurship” scenario, „Chine rule” scenario, „Open-air museum” scenario and „Żubr 2.0” scenario. In the experts’ opinion, the most desired scenario is „Open entrepreneurship”. This scenario assumes effective industry cluster cooperation and full communication and logistics accessibility of the region. It has a positive impact on the research and development infrastructure of the region, creates favourable conditions for the development of enterprises, the creation of new entities, including business incubators, contributes to the increase in the income of residents in the region.

In the “China rule” scenario, the full communication and logistics accessibility of the region due to the lack of cluster cooperation is not enough for the dynamic development of the region. The development of the poviát labour market can be noticeable only in the aspect of the increase in the number of construction enterprises, and most material goods are still imported from China, omitting the values of regional products.

The least favourable arrangement of factors is noticeable in the case of the “Open-air museum” scenario characterized by the difficult communication and logistics accessibility of the region and the lack of cluster cooperation, this scenario presents the *status quo* of the Hajnówka poviát.

The “Żubr 2.0” scenario is characterized by a confrontation of difficult communication and logistics accessibility of the region with effective cluster cooperation; presents the attitude of regional isolationism.

Similar analyses were carried out for the Sejnencki and Grajewski powiats. The detailed description of the scenarios may be found in the monograph (Glińska et al., 2017).

Apart from the scenarios developed for the powiats that occupy lower positions in the ranking, the qualitative research (FDI and IDI) interviews enabled the authors to formulate the following reasons for the differentiations of the county labour markets in the following pairs of powiats: Bielsk Podlaski and Hajnówka, Wysokie Mazowieckie and Grajewo, Suwalki and Sejny. The example of the comparison of the powiats is presented for Bielsk Podlaski and Hajnówka county.

Bielsk Podlaski county versus Hajnówka county:

1. On both local labour markets there operate enterprises that provide services and products not only to local and national but also international recipients. In Bielsk Podlaski County it is a large group representing various industry sectors, and in Hajnówka County this is one leading entrepreneur.
2. In Bielsk Podlaski County there also exist numerous emerging enterprises that ensure attractive workplaces.
3. A vital feature of Bielsk Podlaski County is its spirit of entrepreneurship and the efficient County Labour Office.
4. A significant feature of Hajnówka County is Białowieża Primeval Forest and the related controversies.
5. Both counties face the issue of maladjustment of the educational offer to the needs of the labour market.

The (FDI and IDI) interviews with the representatives of employers, business environment institutions and local government enabled identification of the factors influencing the labour market differentiation that are not so obvious or easily detectable on the basis of available statistics.

Conclusions

The theoretical contribution of the paper to the fields of Management consists in the application of the qualitative method based on the intuitive logic school of scenario construction for the county labour markets analysis.

The practical implications of the methodological considerations presented in the paper in a form of a case study demonstrated that scenario analysis may be a useful tool for the analysis of the factors influencing the situation of the local labour markets. The scenarios elaborated by the experts reflected the range of potential future conditions and challenges for the examined regions. A characteristic feature of all the elaborated factors was the fact that the economic group was the most extensive in all of the analysed powiats. In the opinion of

experts taking part in the study, the scenario approach is novel and stimulating in this way because it stretches thinking, confronts the difficulty, ambiguity and promotes “out of the box” thinking. As the scenarios were not too numerous or detailed, they depicted capabilities and interests relevant to the potential beneficiaries. The fact that the scenarios were developed in pairs and for the poviats that occupy lower positions in the rankings reflecting the situation on the labour market contributes to the mutual learning of good practices between the poviats.

Acknowledgements

The research were conducted within S/WZ/1/2014 project and were financed from Ministry of Science and Higher Education funds.

References

- Bowman, G., MacKay, R. B., Masrani, S., & McKiernan, P. (2013). Storytelling and the scenario process: understanding success and failure, *Technological Forecasting and Social Change*, 80 (4), 735–748.
- Glińska, E., Gudanowska, A., Jarocka, M., Kononiuk, A., Rollnik-Sadowska, E., Samul, J., Kozłowska, J., & Dębowska, K. (Eds.) (2017). *Przyczyny zróżnicowania powiatowych rynków pracy województwa podlaskiego* [Reasons for differentiation of county labour markets in Podlaskie voivodeship]. Białystok: Wojewódzki Urząd Pracy w Białymstoku.
- Gierszewska, G., & Romanowska, M. (2009). *Analiza strategiczna przedsiębiorstwa*. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- Kononiuk, A. (2010). Analiza STEEPVL na przykładzie projektu Foresight technologiczny. “NT FOR Podlaskie 2020” Regionalna strategia rozwoju nanotechnologii [The application of STEEPVL analysis in the project Technology foresight. “NT FOR Podlaskie 2020”. Regional strategy of nanotechnology development]. *Ekonomia i Zarządzanie*, 4, 105–115.
- Kononiuk, A., & Nazarko, J. (2014). *Scenariusze w kształtowaniu i antycypowaniu przyszłości*. Warszawa: Wolters Kluwer.
- Lindgren, M., & Banhold, H. (2003). *Scenario planning, the link between future and strategy*. New York: Palgrave Macmillan.
- Nazarko, J. (2013a). *Regionalny foresight gospodarczy. Metodologia i instrumentarium badawcze*. Warszawa: ZPWIM.
- Nazarko, J. (2013b). *Regionalny foresight gospodarczy. Scenariusze rozwoju innowacyjności mazowieckich przedsiębiorstw*. Warszawa: ZPWIM.
- Nazarko, J. (Eds.), & Kędzior, Z. (Eds.). (2010). *Uwarunkowania nanotechnologii w województwie podlaskim. Wyniki analiz STEEPVL i SWOT* [Determinants of the nanotechnology development in the Podlaskie region: results of the SWOT and STEEPVL analyses]. Białystok: Oficyna Wydawnicza Politechniki Białostockiej.
- Nazarko, J., & Kuźmich, K. A. (2017). Introduction to the STEEPVL Analysis of the New Silk Road Initiative. *Procedia Engineering*, 182, 497–503.

Kononiuk & Gudanowska, 2018. *Determinants of Differentiation for Selected County Labour Markets in Podlaskie Voivodship – the Application of the Scenario Method*

O’Keefe, M., & Wright, G. (2010). Non-receptive organizational contexts and scenario planning interventions: A demonstration of inertia in the strategic decision-making of a CEO, despite strong pressure for a change. *Futures*, 42, 26–41.

Perechuda, K., & Sobińska, M. (2008). *Scenariusze, dialogi i procesy zarządzania wiedzą*. Warszawa: Difin.

Ringland, G. (1998). *Scenario Planning: Managing for the Future*. Chichester: Wiley.

Schwartz, P. (1991). *The Art of the Long View. Planning for the Future in an Uncertain World*. New York: Doubleday.

van der Heijden, K., Bradfield, R., Burt, G., Cairns, G., & Wright, G. (2002). *The Sixth Sense: Accelerating Organizational Learning with Scenarios*. Chichester: Wiley.

van der Heijden, K. (1996). *Scenarios – The Art of Strategic Conversation*. London: Wiley.