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Methods of Determining the Region's Investment Strategy

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Abstract

The region's macro environment analysis identifies the measures that would improve the investment environment in the region and help to create an effective direct domestic and foreign investment promotion system. Based on the findings of the integrated analysis, in the decision-making stage the investment direction is selected, the implementation of which will allow achieving the stated goal. The alternatives for the implementation of the investment direction are formed. Alternatives are described using the efficiency criteria and are assessed using MCDM1 multi-criteria methods. The article presents the creation of the theoretical model of determination of the investment strategy in the context of sustainable development. The study includes an integrated regional analysis using Vilnius district as an example.

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Keywords: sustainable development of regions; region's investment strategy; multicriteria methods

1. Introduction

The country's economic development is not possible without construction: people use construction products – buildings of various purposes – for living, working and other social needs. Correctly targeted construction investments contribute to country's economic growth and sustainable development. Scientific and economic studies have shown a number of attributes for the evaluation of the sustainable development [1]. While most scholars agree that the concept of sustainable development is quite controversial as different interpretations of the concept of sustainability elements exist, one should not doubt the fact that investment is necessary to ensure the sustainable development [2].

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However, the territorial planning is lacking the relationship of practical investment promotion and sustainable territorial development attributes [3].

To change the situation for the better, it is necessary to develop long-term comprehensive measures covering all aspects of socio-economic development of border regions and aiming to overcome their backwardness [4]. The framework of regional policies at all levels of government (national, interstate and local) should include the concept of multi-functional development of these regional entities [5]. In its most general form, the essence of this concept is moving away from mono-functional nature of the economy of backward areas and, if possible, including a greater number of different sectors and industries in order to achieve a higher outcome. At the same time, in the course of changes in the structure of those regions the on-going conversions must not assume a nature of random processes; they must be closely coordinated and based on the use of the most effective measures and solutions [10, 13].

Modernisation and diversification of the economy of those areas, i.e., endowing them with additional functions, which differ from traditional ones, will require the development of relevant integrated programmes, which enable more efficient growth of new sectors and industries not only relying on the potential of the region, but also on the resources of neighbouring territories, including those located in border states [11, 12].

2. Determination of the Investment Strategy

In order to attract investments and to use them purposefully, public authorities must have economic skills in state or district management. This may be achieved by relying on the experience of countries with strong economies and evaluating the future positive or negative effects of capital expansion directions, applying the latest concepts of sustainable development and multicriteria methods for the search and selection of alternative solutions [15–17]. Therefore, to identify opportunities of increasing investment attractiveness and to purposefully direct investment flows to the problematic business branches and/or problematic areas, it is necessary to develop a purposeful investment absorption strategy and to minimise potential risk factors (Fig. 1). For this purpose, it is necessary to perform an integrated analysis of the region, which consists of three major blocks of regional analyses: macro-economic analysis, investment climate analysis and investment strategy analysis [14]. Those are recommended for the following reasons:

- The region's macro environment analysis identifies the measures that would improve the investment environment in the region and help to create an effective direct domestic and foreign investment promotion system
- The investment climate analysis includes the examination of the potential of the region, business development opportunities and the preparation of territorial planning documents. In view of the solutions of the prepared documents, their goals and objectives, the development for economic-commercial activities of the territory, the contents and the deadline of documents to be prepared are established
- The investment strategy analysis includes the examination of potential strategic development directions and the region's SWOT analysis, which reveals the region's strengths, weaknesses, opportunities and threats that may impact the region's business and investment environment, and possible strategic development directions are formed (K1, K2, K3, ..., Kn).

Suggested indices for assessing the potential of the region are the following:

- Administrative divisions (prevailing residential locations, their size and number)
- Land fund (land balance belonging to the state, municipalities and individuals, completeness of the land reform)
- Tourism potential (number of surface water bodies in the region, their quality, wooded and protected territories (parks, reserves, etc.), cultural heritage sites, their condition and their dependence, hiking trails (pedestrian, bicycle paths, etc.), recreational and entertainment facilities
- Attractiveness of settlements (centralised (water and wastewater) engineering networks, centralised supply of water, quality of communications, social infrastructure development, public space design, quality of the environment)
- Clusters (PP, LEZ, business incubators, etc.).

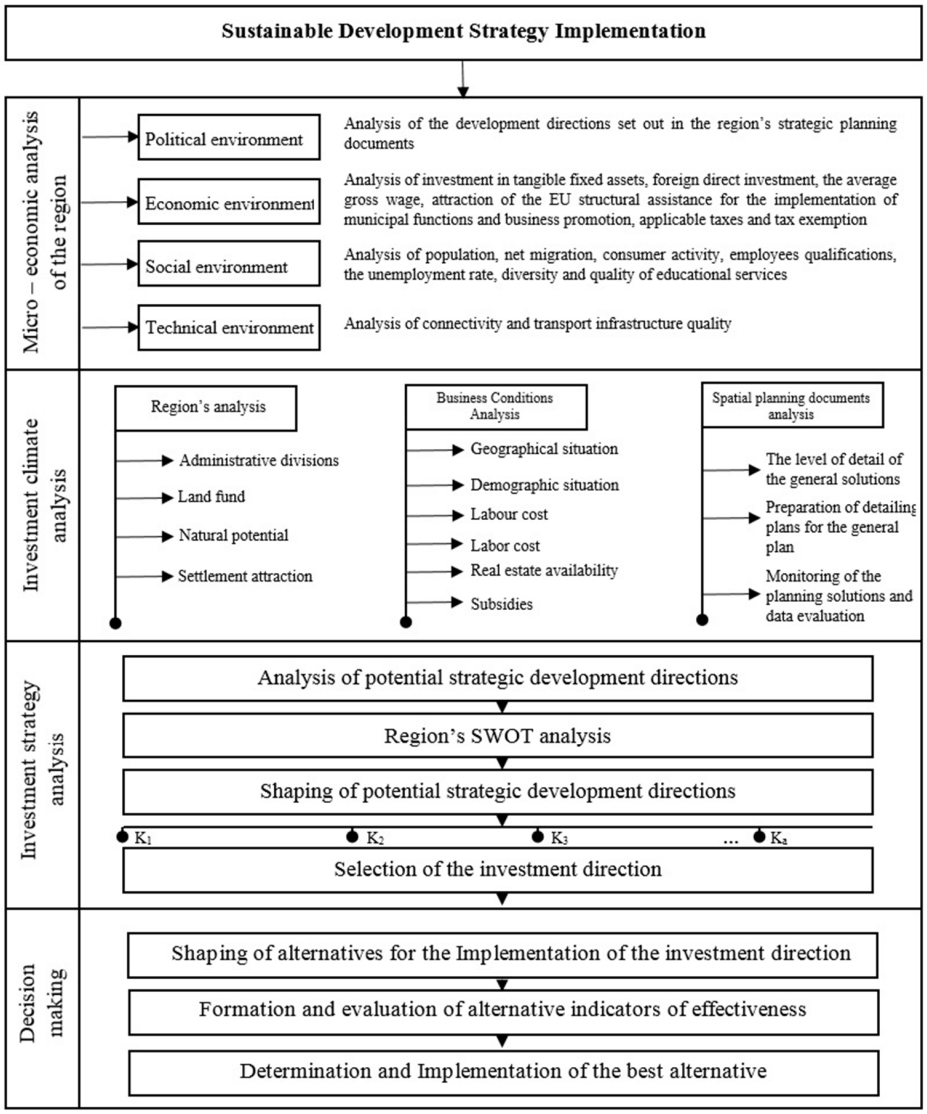

Fig. 1. Investment strategy determination model.

The following indicators are suggested to assess the business conditions of the region:

- Geographic location (location of the region, nearby objects)
- Demographic situation (population, potential of the working-age people)
- Labour supply
- Labour costs
- Real estate availability
- Subsidies.

The importance of geographical location of the region in the context of attracting investment and improving business conditions:

- Geographical location determines the accessibility, transportation costs and time spent on the road
- Nearby big cities and other strategic objects affect the migration of the region's population and business development potential.

Based on the findings of the integrated analysis, in the decision-making stage the investment direction is selected, the implementation of which will allow achieving the stated goal. The alternatives for the implementation of the investment direction are formed. Alternatives are described using the efficiency criteria and are assessed using MCDM1 multicriteria methods (Fig. 2). The complex employs TOPS, SAW, COPRAS multicriteria quantitative assessment methods. The result determines an alternative for the development of the best strategic development direction which is, first of all, suggested for the implementation in order to promote investment in the region and ensure its sustainable development.

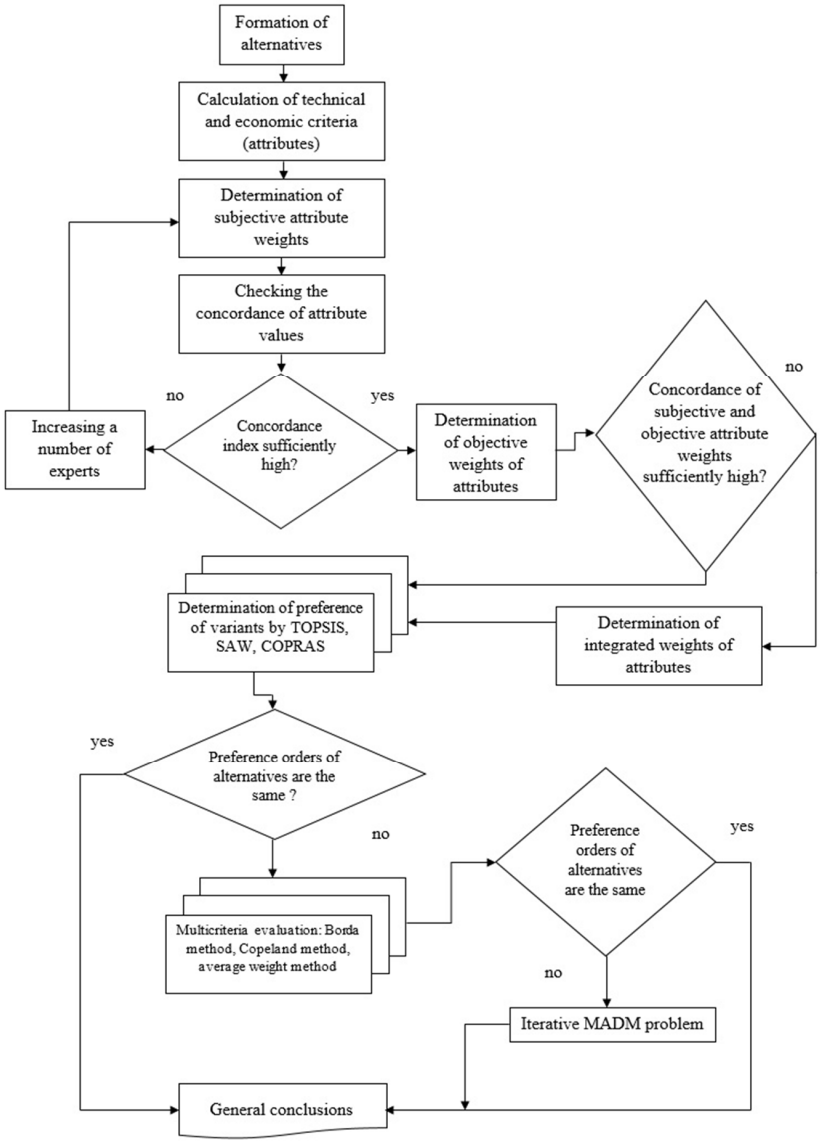

Fig. 2. Multicriteria complex methods.

The study includes an integrated regional analysis using Vilnius district as an example. After the analysis, three possible strategic development directions were identified for Vilnius district municipality to promote investment (logistics and production, one- or two-day tourist trips, and the development of new settlements). Selecting the strategic direction of the logistics and production promotion, the present state of the formed industrial-commercial areas in Vilnius district of has been investigated; their value and development prospects have been evaluated. Three alternatives for the development of industrial-commercial areas are considered:

- *A*1 alternative – minimum investment option. In case of this alternative, the industrial-commercial area develops irregularly, parallel to the development of the whole district; all established areas are developed on the same level by providing proportioned investment
- *A*2 alternative – great investment option. In case of this alternative, the development of the industrial-commercial area is regarded one of the most important development priorities in Vilnius district and the priority industrial-commercial area, i.e., the public logistics center, for the development in a relatively short period of time, the required maximum level of investment is provided
- *A*3 alternative – effective investment option. In case of this alternative, the implemented measures are aimed at the largest industrial-commercial area. In case of Vilnius district, those are two areas: Maišiagala-Avižieniai-Sudervė and Rudamina.

The determined alternatives of development will help identify performance indicators, which will serve as the basis for the comparison of analysed alternatives (variants), (Table 1). A programme model incorporating subjective [6, 7] and objective [8, 9] solutions is introduced in order to determine the significance of performance indicators.

Table 1. The indicators, their types, aspects, descriptions and weights.

Indicator Name	Description	Type	Subjective Significance	Objective Significance	Integrated Significance
Investment volume	Preliminary need for investment necessary to implement the alternative	Quantitative	0.0238	0.383	0.00328
Investment objects	The number of industrial-commercial areas where the main investment has been diverted	Quantitative	0.0437	0.052	0.0445
Implementation period	Time required to implement an alternative (within a 10-year period)	Quantitative	0.1443	0.108	0.0709
Satisfying the need for industrial areas	Satisfying the need for business-ready industrial-commercial areas	Qualitative	0.0985	0.114	0.0457
Satisfying the business needs	Satisfying the business needs (e.g., an attractive investment environment, advanced engineering and transport infrastructure, skilled labour supply, etc.).	Qualitative	0.1449	0.038	0.1991
State of engineering and transport infrastructure	State of engineering and transport infrastructure as compared to the current situation	Qualitative	0.1113	0.038	0.153
Efficiency of publicity and marketing measures	Efficiency of selected publicity and marketing measures in terms of costs and benefits	Qualitative	0.0192	0.129	0.0079
Effects on the quality of environment	Improved quality of the living environment for residents of the industrial areas	Qualitative	0.2412	0.046	0.2768
Impact on the economic development of the district	Impact of the alternative solutions on the economic development of the district (attraction of investment, improved investment environment, greater value-added, etc.)	Qualitative	0.1215	0.046	0.1394

Indicator Name	Description	Type	Subjective Significance	Objective Significance	Integrated Significance
Impact on the social development of the district	Impact of the alternative solutions on the social development of the district (the premise of employment growth, higher living standards, reduction of disparities between regions, decreasing emigration, etc.)	Qualitative	0.0517	0.046	0.0594

The performance indices are formed with regard to the determined development alternatives. Following a survey of experts, the significance of indices is established, and the compatibility of expert opinions is verified. The significance of the formed performance attributes has been ascertained using an expert pairwise comparison method.

The data are entered into the decision-making matrix by replacing qualitative assessments with quantitative ones, and evaluating them. The decision-making matrix for the selection of investment strategy is formed. Qualitative indicators are graded. Technical, economic, environmental and social indicators have been used for the evaluation.

Since the solution of real complex tasks requires more than one method, the methods have to be grouped, merged, and apply sequentially. The MCDM1 complex of multicriteria methods has been applied in the study. The calculation results are presented in the Table 2.

Table 2. Calculation results.

	Method name and ratings					
Alternatives (options)	TOPSIS	ratings	COPRAS	ratings	SAW	ratings
*A*1	0.0183	3	0.241	3	0.584	3
*A*2	0.9092	1	0.400	1	0.981	1
*A*3	0.6787	2	0.359	2	0.883	2

The solution of the task showed that the best alternative is *A*2 – great investments. The great investments alternative defines the development of the priority industrial-commercial area as one of the most important development priorities in Vilnius district and in a relatively short period of time this area will receive the maximum investment required. The campaign for the promotion of Vilnius district as an attractive region for investment and industry is also carried out.

3. Conclusion

Investments are necessary to ensure the sustainable development of the region. A theoretical investment strategy selection model has been proposed to identify opportunities of increasing investment attractiveness. The model consists of four segments: macroeconomic analysis, investment climate analysis, investment strategy analysis and decision-making segment. The aim of this system is to determine the direction of development of the region when enhancing the region's strengths and maximising the use of the opportunities, to purposefully attract investment flows, which, as suggested, might be directed towards the problematic business branches and/or problematic areas.

The suggested principle of formation of investment option and development of the system of descriptive indicators reflects the lack of relationship between indicators of practical investment promotion and sustainable territorial development. The said principle has been applied in the analysis of a specific district. Three alternatives for development of industrial-commercial areas have been formed: *A*1 – minimum investment, *A*2 – great investment and *A*3 – effective investment. The alternative valuation indicators, their types, aspects, directions and significance have been determined.

The literature describes several multi-criteria methods, but in order to solve real, complicated problems, one method is not sufficient. To identify the best of the alternatives formed, the task has been solved using three multi-purpose quantitative decision-making methods – TOPSIS, SAW and COPRAS (MCDM1 complex). These methods belong to one class and can be used in complex [9]. It was determined that development of the priority industrial-commercial area is considered one of the key elements in the development of Vilnius district municipality, and that this area will receive the investment needed in a relatively short period of time. There is also an on-going publicity campaign

promoting Vilnius district as being attractive for investment and industry. This makes it possible to further refine a particular variant at the level of the investment project.

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