

Convergence of voivodship cities in the areas of sustainable development concept

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Dissertation Summary

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The research process proposed in this thesis is based on a holistic view of both the concept of sustainable development, broken down into three main areas, and the processes of absolute convergence/divergence in a general and "club" approach.

In the introduction, the main objective of the dissertation was defined, which was to verify the existence or lack of convergence, mentioned in the title, in the areas of sustainable development between voivodship cities. Three areas of the concept were taken into consideration in the research process: economic, social, and environmental. The fourth area, which provides a kind of reference point concerning the aforementioned, is the real estate market. The main hypothesis of the study is:

H: There is no convergence phenomenon between the voivodship cities.

The verification of the hypothesis was carried out based on the goal stated, that is, the identification of convergence processes. Two auxiliary hypotheses were also posed:

H1: Provincial cities increase the level of differentiation among themselves in particular areas.

H2: The differences that exist between the analyzed cities cause them to form "clubs" of convergence in particular areas.

A literature review was also carried out, in which previous research on both the concept of sustainable development and convergence processes was presented. It was pointed out that there is a wide variety of ongoing research in terms of the methods used and the areas analyzed. The approach proposed in the dissertation complements the literature in terms of its comprehensive coverage of the analysis of the three main areas of sustainable development, the different levels of their analysis, and the local character of the regions under consideration (16 provincial cities).

In the first chapter, the theoretical aspects of economic growth and the emerging convergence that results from the marginal productivity of capital are described. It relates to the

Solow model based on neoclassical growth theory. The model in its basic version was limited to two fundamental factors: capital and labor, while the extended version also includes the level of technology (knowledge).

Chapter two focuses on a description of the concept of sustainable development, both in terms of its origins, definitions, and achievements to date as described in reports on Poland and the Global Report. Also described is the current document related to the concept - Agenda 2030, which identifies 17 goals to be achieved. Two European Union funds were also briefly presented: The Cohesion Fund and the European Regional Development Fund, which by design should support the reduction of the level of disparities between regions.

The third chapter describes the types of convergence and the methods of their verification in a very general approach. It also briefly describes the choice of diagnostic variables and concepts related to the regional division of Poland.

The characterization of the real estate market and the determinants of its development is carried out in the fourth chapter. Both determinants from the social area in terms of demographics and from the economic area are indicated. Individual subchapters contain statistical data on all the mentioned determinants

Chapter five contains a description of the selection pattern of diagnostic variables in the research process carried out in the dissertation. It also indicates the basic statistics of the variables from 2011 (the other years are shown in Appendix 1) and classifies the variables into stimulants and destimulants. The aforementioned aspects, which constitute subsections, are strongly interrelated and focus on one of the most essential elements of the entire process, namely the selection of variables and their characteristics. Methods for creating synthetic indicators are also described in this chapter. The most common methods found in the literature were taken into account. The optimal method for the data used in the analysis was specified as well. For this purpose, a measure of the similarity of rankings was applied. All methods were compared with each other, and the zeroed unitization method was selected for further steps in the research process.

The sixth chapter covers in detail how to verify the three types of convergence: beta, sigma, and gamma. The methods used in the process of verifying the sought-after phenomenon in all areas are indicated. In the next chapter, the results obtained at the level of the synthetic index are outlined. An alternative approach to convergence verification, which allows analysis of changes over the entire period under study, represents the next stage of the research process.

The aforementioned method uses transition matrices based on Markov chains. In addition, this method allows the identification of club convergence, which is also within the scope of the analysis conducted. The division of cities into groups was used both in the transition matrix analysis and using cluster analysis. The analysis carried out allowed the identification of "clubs," that is, groups of cities between which the sought-after processes take place. In the following section identification of the convergence/divergence processes at the level of individual variables was carried out. Gamma-convergence was not identified in any of the areas, which determined the analysis based on the search for beta and sigma convergence/divergence among variables in all areas except environmental, which also contained no indication of in-depth analysis.

The dissertation also provides a summary of the obtained results and conclusions. The main goal of the dissertation was achieved using the methods described. The main research hypothesis set was rejected only in the social area. In the other three, there were no grounds for rejecting the hypothesis, so there was no occurrence of convergence in the group of 16 analyzed voivodeship cities. In the case of the first supporting hypothesis, which concerned the sigma of divergence between all voivodeship cities, it was only accepted in the area of the real estate market. This demonstrates the polarization of local markets. The second supporting hypothesis concerned the existence of the phenomenon of "clubbing" convergence between provincial cities. It was confirmed at the level of the synthetic index in the economic area (beta and sigma convergence) and the social area (beta and sigma convergence). There was no foundation for it in the case of the environmental area, while in the real estate area, it was confirmed (beta convergence) in one of the clusters, but only in the case of an extended analysis and division of cities into 4 groups.

The results obtained allow for verification of the existing development policy implemented in cities with the support of the European Union. Areas indicating positive development trends leading to catching up with better-developed cities should continue to be supported and implemented in their current form. The remaining areas require changes that will enable their faster socio-economic development. The findings may also be useful to potential investors who decide where to locate their investments. Cities with higher potential, which are supported at the local level, are characterized by faster development and may be a better choice over the others.