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mgr Agnieszka Majorek

Summary of the doctoral dissertation entitled

**"The value of unused urban spaces"**

written under scientific guidance of prof. dr hab. Krystian Heffner

Contemporary cities face enormous challenges in terms of sustainable development, including: ensuring good and healthy living conditions, access to appropriate infrastructure and high-quality services, maintaining biodiversity, social balance, engaging residents in planning processes (social participation) or rational and effective resource management. The assumptions of the work focus on the last of the aspects mentioned before, and more specifically on a special type of urban resource, which is space.

Since the turn of the 20th and 21st centuries, it has increased effort to develop solutions aimed at balancing the pace and intensity of urban changes has been observed. Unused spaces (i.e. undeveloped areas, wastelands, open or green areas) are becoming an increasingly popular subject of discussion in the context of contemporary concepts of city development (e.g. sustainable city, high-density city, compact city, 15-minute city). These spaces are created as a result of the loosening of the previously compact spatial structure of the city (related to uncontrolled development of buildings, deindustrialization, depopulation and changes in preferences on housing markets, among others). On the other hand, the uneven development of cities results, among others, in "spatial chaos", the creation of perforated cities, or the occurrence of "island urbanism".

The theoretical and cognitive purpose of the work is to identify unused urban spaces and their characteristics. In the literature on the subject, unused urban spaces are referred to with many terms, in various fields of science. The work is an attempt to define this concept as a subject of research in economic sciences. The issue of "urban wasteland" is raised in many economic publications. However, it is difficult to find works that would clearly indicate the methodology for determining this type of space. The argument confirming the validity of the implemented research topic is the possibility of using the adopted assumptions to monitor dynamic processes taking place in unused urban spaces.

The main research problem of the work, however, is not the very definition and delimitation of unused urban spaces, but an attempt to determine their value. The work is an response to the following questions:

- How to perceive and define unused urban spaces?
- What contributes to the creation of unused urban spaces?
- What are the barriers to the development of unused urban spaces?
- How to assess the value of unused urban spaces?
- What features of unused urban spaces affect the assessment of their value?

An attempt to determine the value of unused urban spaces, calculated with the use of a multi-criteria analysis is an important part of the work. The application aim of the dissertation is to indicate the characteristics of unused urban spaces that may have impact on their value in use. Hence, the following research hypotheses were formulated for the empirical part of the work:

**H1.** *More forms of land use related to residential development in the vicinity of unused urban spaces increases the value of unused urban spaces.*

**H2.** *Average real estate prices in the surroundings have the greatest impact on the economic value of unused urban spaces.*

**H3.** *The distance from residential development has the greatest impact on the social value of unused urban spaces.*

**H4.** *The stocking level has the greatest impact on the natural value of unused urban spaces.*

**H5.** *Unused urban spaces located closer to the city center are developed faster.*

**H6.** *Unused urban spaces characterized by a smaller area are developed faster.*

The first chapter is devoted to considerations related to the city and urban space. The key focus is to identify the causes of emergence of unused urban spaces and to embed them in spatial sciences. The chapter is interdisciplinary in nature because urban research refers to many fields of science. However, the considerations focus on the aspect of space management (perceived as one of city economic resources). The culmination of the chapter is the presentation of the concepts of city development that contributed most to the creation of urban spaces (including those unused).

The second chapter is the review of the literature on definitions and identification of unused urban spaces. Based on the collected information, the reasons for the emergence of this type of space, as well as the ways of their classification, are described. There are also considerations

about the future of unused urban spaces, especially the opportunities and barriers to their development.

The third chapter contains theoretical reflections on the concept of "value", which is a fundamental subject of research in economic sciences. The methods of measuring the value of urban spaces are the key topic here. The considerations also include separate definitions of economic, social and natural values. This chapter closes the theoretical part of the work.

The fourth chapter is devoted to the description of the model for identifying unused urban spaces, which is the result of research and analysis conducted in the work. The pilot studies are characterized, on the basis of which the methodology of delimitation of unused urban spaces, used in the work, is developed. The methodology is an important application value of the work, because it was built on the basis of publicly available data and using free software. Therefore, it is characterized by the possibility of replication.

The next chapter (fifth) presents the results of application of the methodology for determining unused urban spaces proposed in the previous chapter of the work. Then, their characteristic features are presented to find some regularities. A set of over 1,200 spaces was identified, and then their specificity was analyzed.

The sixth chapter presents calculations of the value of unused urban spaces using the multi-criteria analysis method. The indicators selected for the study, as well as the method of their transformation, are discussed. With their help, the value of previously determined unused urban spaces is assessed. In addition, the last part of this chapter discusses the characteristics of the spaces that have been developed.

The characteristics, features and values presented in the work can be used as a collection of inspirations for considerations on unused urban spaces. It is shown on the example of Katowice, that they occupy a significant part of the city, and the work proves that the subject of urban wasteland is important for the development of the urban structure. Their value is often identified with the price of land, while ignoring their wider utility. Nevertheless, vacant urban land has its value in economic, social and natural terms, and the correct recognition of unused spaces in urban resources contributes to a better creation of urban development.