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Abstract of the thesis dissertation

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Multi-criteria assessment as a tool supporting the spatial planning process

Spatial economy was established as an economic discipline that aimed not only to develop, but also to complement the theory of economics related to phenomena and processes in a non-spatial manner. It is highly interdisciplinary because of its character as it combines issues in geography, architecture, urban planning, economics, social sciences, water management, law, traffic engineering and environmental protection.

In Poland, the evolution of studies related to spatial development, which today is the subject of spatial planning, dates back to the 1950s, when the Institute of Geography (PAS) was founded, which is functioning today as the Institute of Geography and Spatial Organization Polish Academy of Sciences (IGSO PAS). Starting with analyses focused on settlement systems, urban development and their spatial impact, as well as analyses of agriculture, transport and industry structures, we come to empirical research in the field of geography, regional economy, spatial planning and urban planning.

The subject of the analyses described in the dissertation is the spatial planning process, perceived as a specific form of management, the result of which is the ability to manage changes in spatial structure. It presents individual documents that are the result of this intentional and conscious process whose paramount goal is to maintain a balance between social and economic interest, as well as the personalised needs of individuals. Thereby, spatial management focused on spatial planning is presented as a part of the humanities in management and quality.

The justification for undertaking this subject matter is the fact that individual planning decisions might be included in crucial decisions for spatial development control processes at the local, regional and national levels. It was indicated that they belong to crucial issues of modern urban planning and, indirectly, they are significant for broadly understood economic environments.

The main objective of the thesis is identification of the factors that shape the usefulness of a place, and assessment of their utilization in the organization of the spatial planning process. Usefulness of a place is understood as a ground possible for development in a given research area. Simultaneously, indicating the complexity of the process, additional specific practical objectives were formulated:

- verifying the possibility of replacing the time-consuming process of analogue data analysis with a comprehensive, digital analytical and spatial model that significantly enables quick decision making,

- obtaining an effective tool supporting the decision-making process in the field of spatial planning.

The dissertation analyses the environmental factors, legal regulations, impact of technical infrastructure elements including communication infrastructure, as well as issues related to the safety of people and property. The thesis also refers to the discussed in the subject literature social, cultural, environmental and economic conditions, which directly determine the possibility of land development, which must be taken into account when preparing planning acts.

The hypothesis is based on the assumption that the analytical-spatial model, which uses multi-criteria assessment, is a useful tool for supporting planning decisions. Usability is understood as a possibility of the planning process optimization in situations where specific decisions must be made in a short period of time or they relate to complex functional and spatial conditions, covering a large area with high investment pressure.

The identified determinants, which decide of the possibility of allocating land for development and evaluate the studied areas, were used to build model solutions for multi-criteria evaluation. The spatial reference was implemented using geographical spatial information systems (GIS). The universal nature of the proposed solutions enables their possible use in spatial planning, and especially in local planning.

This doctoral dissertation consists of four main chapters. The first chapter is focused on the policymaker, the basics of shaping space and the conflict and place utility. It points to the dependency of spatial planning and management science. A strong relation between land use and implementation of strategic and operational goals, and intentions that a given decision making entity wishes to achieve is indicated. It presents how knowledge of the local conditions and planning situation in a given area is important in the decision making process related to determining the purpose of the area.

Chapter two is devoted to legislative solutions. It presents formal and legal solutions, in particular the resulting hierarchy of planning documents and the way they are prepared. The manner of their implementation, as well as its economic effects, is also discussed. In this part of the thesis spatial planning systems of selected European Union countries are shown. It is pointed out that despite the differences resulting from historical or even geographical conditions, they are similar to the Polish system. Reference is also made to the ongoing

legislative work, thus emphasizing the legal framework which must be taken into account by the decision maker.

The third chapter is dedicated to the methodological assumptions and description of the analytical procedure of the proposed model solution. The research areas, discussing the conditions resulting from the current trends in spatial development, applicable planning documents and socio-cultural conditions, are characterized.. Moreover, a reference is made to the specialist studies, such as ecophysiological studies, which were prepared for each area..

The fourth chapter focuses on the implementation of the proposed model in specific case studies for selected areas. It demonstrates the ease of adapting the model to local conditions, including the ability to add or remove individual criteria. The results obtained for individual research areas are also compared. A method of classifying the obtained results is proposed and an attempt is made to indicate actions to be taken in individual areas.

The dissertation shows that an extremely important factor, that should be taken into account when working on the preparation of planning documents, is the opinion of the local community. Increasing social participation and, therefore, replacing the concept of government with the concept of governance allows for a better adaptation of planning documents to the expectations of local communities, and indirectly strengthens the position of local authorities. The obtained results can be used in urban practice as they correlate with the trend of digitization of planning documents and the use of spatial databases.

