

ABSTRACT

The presented publication entitled *Cities of Dynamic Equilibrium. Victorious Cities* is a monograph that:

- Concludes a multi-year research and expert project covering new concepts and perspectives of cities in the process of transformation, emerging cities, new generation cities and dynamic equilibrium cities.
- Crowns a four-year cycle of monographs focused on shaping the future of cities and designing their development in the context of post-industrial Silesian cities.
- Symbolizes the transition in urban research from interdisciplinary thinking and approach to transdisciplinary thinking and approach, reaching for the best achievements of studies on cities and urban systems.
- Presents the ways to make the transition from cities remaining in permanent disequilibrium to cities of dynamic equilibrium based on new transdisciplinary knowledge about cities.

The monograph contains 13 original studies (chapters) organized into three interconnected parts that explore the concepts of cities of dynamic equilibrium and their translation into *transitional* and *transactional* urban design.

The multi-year research and expert project was implemented within the framework of the Interdisciplinary Commission for Studies on the Future of Upper Silesia of the Polish Academy of Sciences, Katowice Branch, and in stages through the City Colloquiums “The Future of Silesian Cities” (see Fig. 1) in strategic partnership with interested cities.

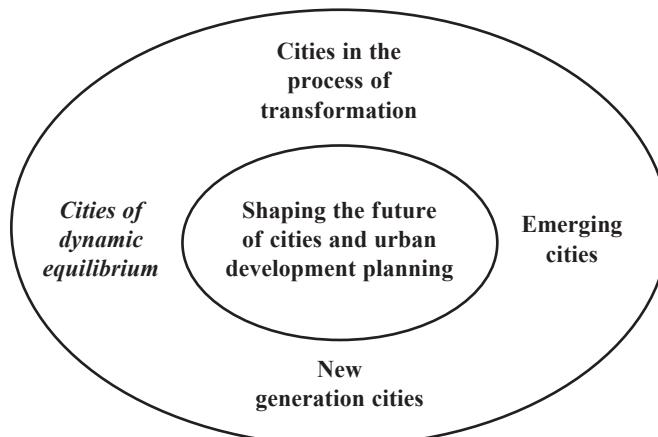


Fig. 1. Multi-year research and expert project of urban research implemented in 2021–2024

PART I. Cities of dynamic equilibrium and smart development

Chapter 1. Cities of dynamic equilibrium and the style of urban management

Andrzej Klasik, Florian Kuźnik

Chapter 2. The impact of smart cities on the development of the region

Brygida Klemens

Chapter 3. Determinants of creating human capital resources for the economy of cities. The case of Silesian cities

Edyta Szafranek-Stefaniuk

Chapter 4. Transdisciplinary urban research. Author's concept of a multi-year research and expert program

Andrzej Klasik, Krzysztof Wrana

Chapter 1 is focused on dynamic equilibrium cities and the style of management of such cities. Specifically, the subject of this chapter is the concept of dynamic equilibrium cities and urban systems interacting with distinguished segments of the global environment. This approach allows for the development of the concept of dynamic equilibrium cities as a set of urban systems, which include urban communities, urban space, sectors of smart and creative activities and infrastructure industries. This sequence of previous considerations allows for the application of transdisciplinary thinking and approach in the context of the developing, new urban studies. Based on this, it was possible to attempt to characterize the style of urban management in the conditions of dynamic equilibrium of cities. The style of management of dynamic equilibrium cities is determined by two elements. The first is the focus of management of dynamic equilibrium cities. The second is the distinguishing features of the management style within the established focus. In conclusion, this leads to urban management conducted in the form of *transitional* and *transactional* urban planning.

Chapter 2 discusses the issue of the key role of smart cities in the process of stimulating regional economies and accelerating the economic development of regions. The main intention of the author of the chapter is an attempt to define the benefits that smart cities operating in it provide for the region. The structure of the chapter's content consists of a presentation of the smart city concept and its application across six functional areas and three generations of the concept's evolution. Based on this, the focus of the considerations is shifted to the field of technological infrastructure and digital infrastructure as the leading factors in the impact of smart cities on the development of urban areas. Technological and digital infrastructure is treated as a pillar for improving the effectiveness of city management and the efficiency of public service provision. This also applies to the functioning of various urban systems in cities, with special emphasis on the urban ecosystem. All of the above prompts the author of the chapter to state that

smart city infrastructure determines the effective use of urban environment resources by all stakeholder groups. Considerations regarding the benefits for regions and their development provided by the functioning of smart cities in their area occupy a special place in the second chapter. Three categories of benefits are used in this respect. They include benefits for the regional economy (economic benefits), benefits for the regional community (social benefits) and sustainable development as environmental and ecological benefits. Each of the distinguished types of benefits has been specified in more detail and may find its empirical exemplification in the future. The challenges faced by the regions and their areas constitute the closing element of the considerations in this chapter.

In **Chapter 3**, the central category is human capital resources as a strategic resource of the economy of each city. The presented chapter has a clearly separated conceptual and methodological part and a research and analytical part, *i.e.*, the case of Silesian cities. The author's intention is to recognize and specify the conditions for creating human capital in Silesian cities with county rights. The key research option is the transformation of human capital in favour of Silesian cities becoming cities of dynamic equilibrium. Methodical research on the conditions for the formation of human capital in Silesian cities in the years 2011–2014 was performed using the tools of descriptive statistics, morphological analysis and causality logic. The catalogue of five key conditions for maintaining and developing human capital in Silesian cities is of key importance for the research and analytical procedure. The analysis of attracting and losing local human capital resources conducted with its use allowed for the generation of two sets of Silesian cities with county rights where human capital is of strategic importance for shaping the attractiveness and competitiveness of Silesian cities with county rights. The first group of cities consists of cities for which developing human capital has become an asset for increasing their attractiveness and competitiveness. In turn, the second group of cities includes those urban centres in which the development of human capital has clearly weakened.

Chapter 4 is an original proposal of a multi-year transdisciplinary urban research project focused on the future and development of post-industrial Silesian cities. The prospects for the future and development of Silesian cities as cities in the process of transformation, emerging cities, new generation cities and cities of dynamic equilibrium constitute the basis for this project proposal. The first element of the new research and expert program are the desired goals and effects to be achieved. The second component of the program is its subjective structure and subject content. To determine the subjective structure of the transdisciplinary urban research program, a quadruple helix was used, and four types of urban space (scene) are distinguished. The elements of the theory of divergent and convergent creative thinking and the strategy of solving urban problems and defining new development paths for Silesian cities constitute the basis of the subject content of the new urban research program oriented towards the development of

shaping Silesian cities. Model thematic fields represent the last, fourth segment of the new transdisciplinary, Silesian research and expert program.

PART II. Network development of cities. New models of structural and functional-spatial transformations

Chapter 5. Networking of the urban space of a complex settlement system

Jerzy Runge

Chapter 6. Consolidation of the Katowice conurbation

Krzysztof Gasidło

Chapter 7. The network of Katowice conurbation cities and systemic change

Robert Krzysztofik

Chapter 8. Competitiveness of exports from Silesian cities

Tomasz Komornicki, Barbara Szejgiec-Kolenda, Julia Wójcik

For many years, geographers, urban planners and economists have been discussing the relations between the cities of the Katowice conurbation. Various phenomena of a spatial nature, but also social and cultural ones, are observed and discussed. Among various concepts, the one that sees the relations between the cities of the conurbation in terms of networking is important. Jerzy Runge (*The networking of the urban space of a complex settlement system*) distinguishes three aspects of networking: real, virtual and consciousness-identity-related. However, the conurbation is not a static system. The ongoing transformations, which can be expressed by the term “transformation”, change the internal and external relations between the elements of the network, leading to the state of “post-transformation networking”. Typical phenomena for this stage are shown on the examples of changes in various areas: suburban (suburbanization), downtown (revitalization and gentrification) and industrial districts (special economic zones).

Robert Krzysztofik also perceives the cities of the Katowice conurbation as a network (*The network of cities of the Katowice conurbation and systemic change*). Discussing knowledge on the issue of networking, he presents various points of view and various aspects, including those resulting from historical research. The remark regarding the change in the perception of city complexes not only as settlement networks but also settlement systems seems important here. In this light, the author formulates the following question: “The Katowice region – a networked region or a regional urban system?” When answering it, it should be noted that for some time now we have been observing the process of metropolisation of the Katowice conurbation area. This is a factor that “will gradually reduce the role of networking”, leading from the state of “existing networking in a relatively weak metropolis” to the state of “weakened networking in a relatively strong metropolis”.

Krzysztof Gasidło (*Merging of the Katowice conurbation*) also notices this process, trying to present the process of transformation of the Katowice conurbation towards

a centralized system. He distinguishes two phases of this process. The first, more spontaneous in nature, is the “gluing” (agglomerating) of small settlements into larger cities. The second, intentional and planned in nature, is the merging leading to the creation of new urban organisms. Various ideas for merging – integrating cities of the conurbation have been appearing for several decades, but it was only the loss of their own economic base of many of them and the emergence of competition between them that accelerated conceptual work and led to the creation of institutional forms of cooperation. Currently, we are at a time when attempts at spatial merging of conurbations appear. They can be seen in the structural, functional and mental aspects. The first one means giving the conurbation space the features of integrity and complementarity, but this requires the use of appropriate planning tools. The functional aspect is expressed in such shaping of public spaces, technical infrastructure and greenery systems so that they become common spaces for residents of neighbouring cities. Mental integration involves the use of various means and the activation of factors that will gradually shape the ideas of residents and other users about the conurbation space as one city.

The networking nature of the Katowice conurbation can also be examined by observing the economic position of individual cities measured by the share of exports in their GDP. Tomasz Komornicki, Barbara Szejgierc-Kolenda and Julia Wójcik (*Competitiveness of export from Silesian Cities*) examined the RCA (*Revealed Comparative Advantage*) index for 19 cities with county rights in the Silesian Voivodeship. The results indicate significant differentiation in their positions, as well as they show that due to the administrative division, the benefits of competitive advantages are not distributed across the entire conurbation, despite the fact that it constitutes a single labour market. This raises a question about the nature of relations between cities that are perceived as network cities. Similarly to the previous chapters, the issue of Katowice’s position occurs. It proves that their position measured by the RCA index is not high, and therefore their potential is based less and less on the export of industrial production.

PART III. Cities for all. Green and healthy cities in the process of green transformation

Chapter 9. Availability and quality of housing as a determinant of the development of winning cities

Wiktoria Jędrusik, Agnieszka Majorek-Gdula

Chapter 10. Green transformation of Upper Silesian cities: urban challenges and environmental needs

Adam Bartoszek

Chapter 11. Delimitation of development areas for the purpose of adapting cities to climate change

Magdalena Głogowska

Chapter 12. Sustainable development of cities and metropolises
– theory, practice and strategic awareness

Marcin Budziński

Chapter 13. The role of cultural institutions in the urban and regional economy
on the example of the Świętokrzyskie Voivodeship

Edyta Łyżwa

The third part of the monograph, entitled *Cities for all. Green and healthy cities in the process of green transformation*, contains five texts (chapters) devoted to various aspects of the development of urban centres, including regions, in connection with broadly understood environmental and socio-cultural factors. The development of cities, often referring to the concept of *smart cities*, consists in building urban systems that guarantee high quality of life, understood as a healthy environment operating on the principles of a closed-loop economy¹. Such urban development has either a neutral or even positive impact on the environment².

In **Chapter 9: Availability and quality of housing as a condition for the development of winning cities**, Wiktoria Jędrusik and Agnieszka Majorek-Gdula discuss the development issues of cities in terms of the quality of housing and housing availability. The quality of housing resources, their location and the possibility of using urban infrastructure are also of great importance. At the same time, ecological aspects, such as the quality of the environment and the implementation of sustainable solutions for the current functioning of cities, are becoming increasingly important. In this context, it is justified to focus attention on the importance of the so-called good practices in this area. They are of key importance for the winning cities.

Chapter 10 by Adam Bartoszek: *Green transformation of Upper Silesian cities: urban challenges and environmental needs* is an attempt to explain more comprehensively the inspirations available in the literature that can serve urban planners and city decision-makers to implement new strategies that consider the well-being of urban ecosystems and combine urban needs with environmental values. It also indicates the ways in which in environmental planning, a balance is created between urban resources and the challenges of green transformation of cities and the needs of residents. Such challenges force city planners to use a comprehensive approach to solving urban problems.

Chapter 11: Delimitation of built-up areas for the purpose of adapting cities to climate change by Magdalena Głogowska, presents various methods of mapping development and land cover, as well as data sources (services) that enable the delimitation of built-up

¹ [Baron 2012: 32–50; Ochojski 2022].

² [Angelidou 2014: S3-S11, <https://doi.org/10.1016/j.cities.2014.06.007>].

areas in cities and their surroundings. As the author notes, the topic remains open, because in recent years we can observe the rapid development of services and methods related to mapping built-up areas, which significantly increase the interpretation possibilities of researchers of the phenomena occurring between growing urban development and natural environment. Services are reliable sources of information for the purposes of environmental management in the context of both adaptation to climate change (including the issues related to the urban heat island), as well as spatial planning and controlling urban development.

In **Chapter 12: Sustainable development of cities and metropolises – theory, practice and strategic awareness** Marcin Budziński focuses on several important, detailed practical aspects. The very understanding of the concept of sustainable local development is controversial, just like the way of approaching the regulatory context – starting from the global level and the *Sustainable Development Goals* adopted by the UN General Assembly under resolution 70/1 (*UN SDG*), in the applied practical approach and implemented in cities and metropolitan areas. The analysis is conducted in a comparative approach for three metropolitan areas: the Upper Silesian-Zagłębie Metropolis and the Gdańsk-Gdynia-Sopot Metropolitan Area (Poland) and the Ruhr Metropolitan Area (Germany). The study has a very wide scope (sample of 9 thousand respondents in the period 2023–2024) and enables the decomposition of the management of sustainable development of cities and metropolises into three characteristic groups of research and practical issues, *i.e.*, understanding sustainable development [1], strategic awareness [2] and prioritization of the UN Sustainable Development Goals [3]. Mainly conclusions and recommendations, resulting from both in-depth research and well-known literature on the subject, are arranged in 9 fields that can be the subject of separate research and analyses (e.g. use of practical understanding of sustainable local development, updating strategies and policies towards sustainable development, practical use of knowledge about differences between cities, metropolises and voivodeships in Poland and Germany and knowledge about SDGs (*Sustainable Development Goals*) preferences seen in development priorities and goals, *etc.*).

Finally, **Chapter 13**, the last one, prepared by Edyta Łyżwa, focuses on *The role of cultural institutions in the urban and regional economy*. The analysis, consisting in the identification and assessment of selected features of cultural entities with a key role in the region, is conducted using the *example of the Świętokrzyskie Voivodeship*. Entities conducting business activities related to culture and technology, combining artistic activity with entrepreneurship, create a part of the market referred to as the creative sector. Their activity is based on knowledge resources as well as the creativity and skills of people, which usually results in the economic growth of both the region and its components, mainly the largest cities. Their basic segment is culture and art, most often represented by entities from the so-called GLAM sector (galleries, libraries, archives, museums) and performing

arts (theatre, opera, philharmonic, cinema). The study covered 8 cultural institutions of the public sector subordinate to the regional authorities of the Świętokrzyskie Voivodeship (creative sector entities). Among the conclusions resulting from the research, the Author's demonstration of the weakness of the creative sector in the Świętokrzyskie region is worth noting. Public cultural institutions at the regional level are deficit structures (only about 15% of the budget is covered from the income obtained). The constant lack of financial resources for the promotion of activities and for investments is one of the identified main barriers to development. If the strength of the creative sector is its impact on related areas of the economy (including tourism, gastronomy, transport, specialized trade, construction, *etc.*), then the lack of noticeable connections of this type indicates its weak impact on the socio-economic development in the Świętokrzyskie region, especially when it comes to larger urban centres (Kielce, Ostrowiec Świętokrzyski, Starachowice, Skarżysko-Kamienna, Busko-Zdrój). The difficulties in the development of the creative sector in the region include its small population, area and economic potential, as well as the low level of urbanization. However, attention is drawn to beneficial proposals of good practices, including examples of activities in the Upper Silesian Conurbation³, which may inspire the search for new concepts of creative development management in key cities in the region and in the entire Świętokrzyskie Voivodeship.

The monograph, consisting of three extensive parts, is devoted to the development of cities in the process of their dynamic equilibrium. The management of the development of cities takes place through various states of equilibrium, understood intertemporally. They concern the relations between urban systems and between them and distinguished segments of the global environment. The above can also be interpreted as the entry of dynamic equilibrium cities onto the path of gaining competitive advantages (winning cities). In their articles, the authors present research results that indicate that the dynamic equilibrium of cities can be combined with the implementation of the concept of smart and creative cities.

The various concepts and approaches to shaping the future and designing the development of dynamic equilibrium cities contained in the monograph may be of interest to various research communities and academic centres. In the decision-making terms, they may prove useful for city authorities, and in the procedural and technical layer for city specialists and designers. The publication presented to a wide audience may become a source of inspiration for young people, doctoral students and students of various fields of study.

*Krystian Heffner
Krzysztof Gasidło
Andrzej Klasik
Agnieszka Majorek-Gdula*

³ E.g. [Klasik 2014; Klasik, Kuźnik 2017].