# BIBLIOTEKA REGIONALISTY

# The Multidimensionality of Urban Space in Light of the New Economy

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**Abstract:** The multidimensionality of urban space in light of the new economy seems complex. The aim of this research was to introduce the meaning of both ideas and emphasise their importance for urban development. The subject of the research were case studies of two European cities, Rotterdam (the Netherlands) and Wroclaw (Poland). The research methods were the literature review, benchmarking, and case study, which help to understand and explain the analysed problem and confront it with the case studies. It is essential to note that the same solutions may not be suitable for every case. However, there are some urban policies and local governmental decisions that would be valuable good practices, which could solve challenges difficult for other urban units.

Keywords: multidimensionality, urban space, new economy, urban development, Wroclaw, Rotterdam

# 1. Introduction

The challenges and changes that face cities, their inhabitants and local government appear immediately and unexpectedly. To be able to deal with them, understanding a city as a multidimensional space is essential.

This paper aims to explain the multidimensionality of urban space, the new economics and to present their importance for urban development.

The authors present a literature review based on literature studies, and case studies of multidimensional urban spaces fitting the idea of the new economy. The subject of research were two cities in Europe: Rotterdam (the Netherlands) and Wroclaw (Poland). Both cities are similar in size and number of citizens, and are quite active in implementing innovative and sustainable solutions. They are academic centres that gives them the best possibilities for creating new ideas, ready to introduce, use and share. The greatest number of implemented changes in the chosen cities is based on multilevel governance rules which is crucial for creating new hybrid concepts and solutions. What is essential, the approach presented by Rotterdam and Wroclaw is the main necessity when resilience is needed.

The authors also raised the following questions: what does the multidimensionality of urban space in light of the new economy mean for urban development? Which factors are essential for the quality of urban development? What is the specificity of multidimensional urban space?

The subject of the study was determining the processes taking place in urban space from the viewpoint of the economic approach. The research problem was focused on the changes which can be observed in turbulent and dynamic urban space.

In following these issues, questions and problems, the authors tried to find good practices which are valuable to share. However, it may seem that both the multidimensionality of urban space and the new economy concept are a big challenge for local governments, and the amount and variety of factors may make it difficult. Thus, are there any models that should be emphasised?

# 2. Urban Development and the New Economy – a Literature Review

The dynamic development of cities provides the opportunity to create and implement many urban theories which seem to be the answers to the latest problems like climate change and economic challenges.

The analysis of urban development theories may be helpful to understand how important they are (Table 1). Cities which are innovative, productive, creative, and smart may quickly increase their competitiveness, while being green and creating a responsible water management policy make the quality of life much higher.

Innovative city	The construction of innovative cities is an important manifestation of the implementation of national
	in the global ranking of inporting siting ranging stable, which is clockly related to their consistent
	in the global ranking of innovative cities remains stable, which is closely related to their consistent
	support for technological innovation (Jones et al., 2019).
	Cities house innovative firms and innovative people, yet not all cities are innovative power houses and
	not all are innovative in the same way or to a similar degree across national geographical areas. Some
	cities at some times are 'in decline' while others are growing in both population and economic terms
	so fast that infrastructure provision and other innovation-related organisations and services may not
	be able to keep up. In between there are cities where innovation is accepted as a desirable goal but
	where for various reasons it is not leading the city's development. In some other cases, the public
	authority side of the city may be far ahead of business development, while in others innovation is
	pushed by companies powering ahead (Marceau, 2008).
Creative city	Looking at consumption-based gentrification theories, the vision of the "creative city" brand is one
	that embodies "city-living" style, with a distinct cosmopolitan and arts appeal, in both real estate
	development and urban regeneration (Vivant, 2013).
	Creative city refers to a <u>new 'method</u> of strategic urban planning and examines how people can think,
	plan and act creatively' (Landry, 2008). Hence, a city is being creative when people adopt new and
	different ways of looking at the problems which they face (Chatterton, 2000).
Smart city	A city to is believed to be smart when investments in human and social capital and traditional
	(transport) and modern (ICT) communication infrastructure fuel sustainable economic growth and
	a high quality of life, with the wise management of natural resources, through participatory
	governance (Allwinkle & Cruickshank, 2011).

Table 1. Chosen definitions of modern urban con	cepts
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	[] smart cities can be seen to embody specific characteristics which include digital infrastructure and ICT usage, an emphasis on business-led urban development, the social inclusion agenda via e-governance, concern with high-tech and creative industries in urban growth, the importance of social capital in urban development and the inclusion of environmental and social sustainability (Caragliu et al., 2011;
Green city	A 'green city' is a city that takes responsible political and societal action in order to achieve high environmental quality, which by itself contributes to human well-being (Lewis, 2015; Pace et al., 2016).
	Defining what a green city is, means many different things to different people. There is no universal solution that can be applied to every city in any country. Adaptable, responsive, and innovative solutions that differ from one place to another enable green cities to emerge in various guises and recognise the variation and dynamism of cities (Lewis, 2015).
Sponge city	The 'sponge city' concept includes water bodies such as rivers, lakes, and ponds, as well as supporting urban facilities such as green spaces, gardens, and permeable road surfaces. Rainwater is filtered, purified, stored, and reused, with residual flows routed through a network of pipes and pumping stations, to effectively raise the design standard of urban drainage systems and reduce the flood risk in the city (Wang et al., 2019).
	The rationale behind the sponge city projects is to mitigate the impact of urban development on natural ecosystems while addressing water problems in cities (Li et al., 2018; Wang et al., 2019). Some popular technologies used in a sponge city construction sites include green roofs, green areas, artificial rain wetlands, infiltration ponds and biological retention facilities as well as water permeable surfaces (Chen, 2016; Liu et al., 2015; Li et al., 2017; Li et al., 2016; Li et al., 2018; Liu et al., 2017; Zhang et al., 2016; Nguyen et al., 2019).
Productive city	A 'productive city' would be this space that – without denying the quality of the inherited spaces – could open the way for a more unusual territorial organization that mixes the inhabitants' individual conditions, the working conditions, and any kind of productive activities (commercial, crafts, production, logistics, stores) within a resilient, welcoming, and open urban space (Europan Europe, 2017).
	<ul> <li>Productive cities focus on:</li> <li>Efficiency of urban systems (environmental, economic, and social) in the use of urban resources nd dependence on peri-urban areas.</li> <li>Achieving high levels of economic (commercial, industrial, and agricultural) and social activity and growth, continuous development, in addition to integration with the urban fabric.</li> <li>Spatial organization that mixes the social population conditions and any kind of functional-productive activities through contemporary architectural types within an urban space with characteristics: common hybrid, different, more unique, flexible, welcome, and open (Hasan, 2020).</li> </ul>

Source: own elaboration based on the sources listed in the table.

On the other hand, it is also necessary to remember how many urban theories exist, which shows how complex is the idea and the structure of a city. This can lead to another conclusion: if there are so many various theories, then urban space seems to be multidimensional.

The 'new economy' is a term to describe high-growth industries on the cutting edge of technology. It is believed to be the driving force of economic growth and productivity (Figure 1).

Sustained long-term economic growth comes from increases in worker productivity, and how well things are done; labour productivity is the output that each employed person creates per unit of his or her time (Miszczak, 2012; 2015).

Liesh presented seven features of the new world economy (Liesh, 2023):

- 1. More options for production.
- 2. The chance to create new markets (also labour markets).
- 3. Small firms can think big.
- 4. A more level playing field.
- 5. Networks are important.
- 6. Culture is no constraint.



Figure 1. Dimensions of New Economy

Source: own elaboration.

The above lead to the new paradigm of socio-economic development. Against the old paradigm, the new one is based on a holistic, systemic, and ecological approach, and focuses not on elements but on networks and their advantages. All the ongoing processes are intensely dynamic and create new horizontal structures (Miszczak, 2008). Its substantial value is constantly creating knowledge and presenting the point of view that what is known is never the answer to all the questions and known paradigms can collapse. It is easy to see the knowledge is not the foundation, it is just a database connected by the network (Miszczak, 2020).

# 3. What is the Multidimensionality of Urban Space?

There are many approaches and interpretations regarding the multidimensionality of urban space. The first of them views urban space as a physical area. Many researchers have suggested different ideas about organizing the space and creating models. Some of them were based on a spatial arrangement, e.g. linear cities (cf. Soria y Mata), centric cities (Burgess), and radial system cities (Hoyt). The last two concepts are essential viewpoints that introduce the idea of a city divided by its functions (Tufek--Memisevic & Stachura, 2015; Furundzic & Furundzic, 2012).

Foucault noticed the connection between urban planning, architecture, and social behaviours. The first two were tools that could be used to impact on different actions taken by citizens.

Bardet saw a city as a collection of small clusters where citizens create an open and strongly integrated society (the society of the neighbourhood). It could be compared to the idea of new urbanism, or even to that of a productive city (Stanek et al., 2013).

New urbanism was created in the 1980s in Florida. The concept was focused on planning neighbourhoods where citizens could interact to each other, and where the streets should be safe for pedestrians (Nowak, 2019; Parker, 2019). This can be achieved by using the optical illusion of narrowing streets (trees by the road) and parallel parking (cars become a safe barrier between sidewalks and moving cars). The idea also included car-free zones, and the most needed services available by a few minutes' walk (today it is comparable to 15-minute cities like Paris), and any other open-access zones that encourage social interaction. These issues are essential for the level of well-being. Why is it so crucial? The answer may be found in its productivity and the level of it.

A productive city, as mentioned in the previous section, is one of most important concepts of modern cities. Urban units that can afford being mostly independent of exogenous factors, can attain high quality in competitive advantages. These cities are economically strong, and they impact on their region. The concept of a productive city focuses on a few crucial solutions that present holistic attitude of this idea (Figure 2).



rigure 2. Dimensions of producti

Source: own elaboration.

The next essential aspect of productive cities is mixed use spaces, where each building or zone should be planned to use them for different aims (Figure 3). For example in the Marina del Prat neighbourhood in Barcelona, it is possible to see that buildings are divided into four elements: collective roof garden (collective and integration zone), the lofts, the shared workshops, and green area (open for all pedestrians). This project provides sustainable area of living and working (that boosts productivity) but also solves problems like dead zones (e.g. office spaces which are used only in working hours), and thus improves the level of safety of this area and also increases the level of well-being.



Figure 3. Functional division of buildings in the Marina del Prat neighbourhood, Barcelona Source: (Balcells & Grzesikowska, 2015).

Another approach is linked to environmental issues. A green and sustainable city refers to well-being, adapting to climate changes and facing various natural crises (Lewis, 2015; Wang et al., 2019). Each city is an ecosystem that, if it is respected, may be helpful in finding solutions for its future needs (Andersson, 2006).

Urban spaces are also the most dynamic environments of innovation. The number of different stakeholders, needs, infrastructure and their quality impact on creating new ideas (Wantuch-Matla, 2014). It provides perfect conditions for innovation caused by various processes that were not seen or known before (Drobniak, 2017, 2019; Koolhaas, 1998).

To sum up, how the urban space is created is essential for determining the chosen processes (economic or social) that may result in enhanced productivity.

The multidimensionality of urban space seems to be one of the most critical factors of urban development when considering new challenges. Understanding the complexity of a city structure constitutes a fundamental knowledge in facing inconsistent economic processes, and their accelerating changes and growing difficulties. Providing stable productivity is the main concern of the new economy.

# 4. Multidimensional Spaces in the Selected European Cities – the Case Study of Rotterdam and Wroclaw

The multidimensionality of space that matches the new economy idea perfectly is a difficult challenge to place in any city. Some cities can present just a few such characteristics, others are in the process of implementing the newest solutions. This chapter focuses on four case studies, two in Rotterdam in the Netherlands and two in Wroclaw in Poland.

The first example is Blaakmarkt (Blaak) and Markthal in Rotterdam. Blaak is a huge square in the city centre. Each day it is used as a pedestrian area surrounded by different offices and services, where people commute and/or spend their leisure time (Picture 1). There is also a market held on selected days (Gementee Rotterdam, 2023a). Other popular attractions are the Cube Houses and Markthal, the latter being especially interesting from the point of view of this research (Picture 2).



Picture 1. Market at Blaakmarkt Source: own collection.



Picture 2. Markthal seen from inside and outside Source: own collection.

The building was designed by MRDV, one of most important architectural practices in the Netherlands. Markthal was built in 2014 as an open and mixed-use space including market, restaurants, various services, business offices, apartments, and parking. The site is also distinguished by its unusual form and the enormous print on the ceiling rendered by Pixar software (MRDV, 2023). The appearance of Markthal reflects the character of this area and encourages visitors and residents to use this space.

Nevertheless, this area is not perfect. The biggest issue of Blaak and Markthal is the lack of greenery (or its poor condition) and the bad quality of the natural environment. This is a serious problem in terms of drought and biodiversity that the local government should take under consideration.

Another interesting space in Rotterdam is Rijnhaven, a historical part of the harbour and quays. This is a long-term project prepared by the Barcode Architects studio that started in 2019 (Picture 3). The project includes accessible water area, social rental houses, owner-occupied houses, expensive houses (faced with the problems like gentrification and housing crisis – the biggest challenges of the Western Netherlands), restaurants, workplaces, leisure time spots, green areas, water biodiversity spaces and sustainable-educational park (Gementee Rotterdam, 2023b; Barcode Architects, 2023).



Picture 3. The visualization of future Rijnhaven

Source: (Barcode Architects, 2023).

What is more, the entire project is based on PPP (public-private partnership). A future Rijnhaven could be an ideal example of multidimensional space following the new economy idea.

The next example is in the historical centre of Wroclaw. Nowy Targ is a big square surrounded by the municipal offices, restaurants, services, and blocks of flats. Usually, it is used as a place for meetings, different festivals and events, commuting zone and a car park. It became 'famous' in public debate because of the low quality of the greenery and extremely high temperatures in summer. This year the municipality presented a new project for the square (Picture 4), which should be completed in 2024 (Zielony Wrocław, 2023). This will provide 63 thousand plants and a new system of water retention. The next steps involve the modernisation of street lighting and electricity infrastructure designated for events and food trucks (which are the most common attraction in this area). The local authorities also consider building a fountain in a few years' time. The whole idea is part of the Municipal Plan for Climate Change. This project seems optimistic – climate change and urban heat problem pose a big challenge for local governments, however the authorities should also analyse other aspects such as gentrification and the lack of local businesses around this square.



Picture 4. Visualization of Nowy Targ square Source: (Zielony Wrocław, 2023).

The final example is the planned Centrum Południe (South Centre), a complex of office buildings, apartments, services and leisure time spaces. The most important aspects emphasised by investors were comfortable commuting, a space open for local residents (who lost a big green area in this neighbourhood), and a large amount of greenery and sustainable solutions (Skanska, 2023).

Unfortunately, various alterations during the construction work (including the investors) resulted in a space with great potential that was not used at its best. There is no access for people with limited mobility and the greenery exists only at the minimal level. The promised integration and leisure time spots are just benches on concrete, few swings and one small basketball court.

This project is an example of poorly governed investment, and at the same time also a lesson for local governments that they should pay more attention to the prepared regulations.

The described cases represent both good and bad practices – some of them need only some modernisation, seemingly quite simple to implement. It is not an easy challenge to follow the new economy and principles of multidimensionality. However, it is still possible as it was demonstrated by the example of Rijnhaven. The key rule is to include all the stakeholders in the process (public-private partnership), then creating a model space may be possible.

## 5. Conclusions

The presented approaches appear pretty much like each other, but they are complementary parts of a holistic point of view for urban development. The principles of both the multidimensional urban space and the new economy are crucial in terms of a sustainable and effective urban development.

Preparing the city for constant changes by empowering its resilience and productivity is the main solution in present environment and conditions, favouring the new economy and multidimensional characteristics.

The case study shows different examples of problems faced by local governments. Each decision should be considered with the aim of fulfilling as many dimensions as possible. The analysed cases reveal that it is not an easy task. Fortunately, from the viewpoint of learning cities and the accessible possibility of benchmarking, numerous decisions and policies could be improved.

One of the most important suggestions for municipalities is to create policies including PPP, which may become successful as in the case of Rijnhaven. In the opposite case, this may result in situations such as South Centre in Wroclaw.

Local governments need to take all the stakeholders into consideration.

Another important aspect in the effective development of urban space is long-term planning. The mere ideas cannot be just the answer for an existing problem, moreover they should try to predict future obstacles, when solutions like foresight could be crucial to use. They are the models that should be highlighted in urban planning and urban development.

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#### Wielowymiarowość przestrzeni miejskiej w świetle nowej ekonomii

**Strzeszczenie:** Wielowymiarowość przestrzeni miejskich w świetle nowej ekonomii wydaje się bardzo złożonym pojęciem. Celem badań jest przybliżenie wagi obu idei i podkreślenie ich znaczenia w kontekście rozwoju miast. Przedmiotem badań są studia przypadków dwóch europejskich miast – Rotterdamu (Holandia) i Wrocławia (Polska). Wybrane metody badawcze to przegląd literatury, benchmark i studium przypadku. Przedstawione metody pomagają zrozumieć i wyjaśnić analizowany problem oraz skonfrontować go w świetle zaproponowanych studiów przypadków. Należy zauważyć, że te same rozwiązania mogą być niewystarczająco skuteczne w zależności od specyfiki danej przestrzeni miejskiej. Z drugiej strony istnieją pewne polityki miejskie i decyzje władz lokalnych, które mogą stanowić cenny zbiór dobrych praktyk, a w konsekwencji, ze względu na swoją uniwersalność, pomagać w rozwiązywaniu problemów, z jakimi mierzą się inne miasta.

**Słowa kluczowe:** wielowymiarowość, przestrzeń miejska, nowa ekonomia, rozwój miast, Wrocław, Rotterdam