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**14. Međunarodna  
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**PLANIRANJE,  
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**14. International  
Scientific Conference**

**PLANNING, DESIGN,  
CONSTRUCTION  
AND RENEWAL IN  
THE CIVIL ENGINEERING**

**iNDiS**  
2018

**Subkonferencija**

**Subconference**

**Eco build**

**ZBORNIK RADOVA**

Novi Sad, Srbija  
21–23. novembar 2018.

**PROCEEDINGS**

Novi Sad, Serbia  
21-23 November 2018

UREDNICI/EDITORS:

V. Radonjanin  
R. Folić



Ovaj zbornik radova pripremljen je sredstvima Departmana za građevinarstvo i geodeziju, Fakulteta tehničkih nauka, Ministarstva prosvete, nauke i tehnološkog razvoja i uz materijalnu pomoć donatora

*Urednici:*

Prof. dr Vlastimir Radonjanin, dipl.inž.građ.  
Profesor emeritus Radomir Folić, dipl.inž.građ.

ISBN 978-86-6022-105-8

CIP - Katalogizacija u publikaciji  
Biblioteka Matice srpske, Novi Sad

69.05(082)  
624(082)  
72:502.1(082)

**МЕЂУНАРОДНА научна конференција ИНДИС (14 ; 2018 ; Нови Сад)**

Zbornik radova [Elektronski izvor] = Proceedings / 14. međunarodna naučna konferencija iNDiS 2018, Novi Sad, 21-23. novembar 2018. = [14th] International Scientific Conference [iNDiS], with Subconference "Eco build", Novi Sad, 21-23 November 2018 ; [urednici Vlastimir Radonjanin, Radomir Folić]. - Novi Sad : Fakultet tehničkih nauka, Departman za građevinarstvo i geodeziju, 2018. - 1 elektronski optički disk (CD-ROM) ; 12 cm

Nasl. s naslovnog ekrana. - Radovi na srp. i engl. jeziku. - Bibliografija. - Rezime na engl. jeziku uz svaki rad.

ISBN 978-86-6022-105-8

a) Индустијска градња - Зборници b) Грађевинске конструкције - Зборници c)  
Архитектура - Еколошка градња - Зборници  
COBISS.SR-ID [326766855](#)

**Međunarodna naučna konferencija iNDiS 2018**

Tehnička organizacija skupa:

Departman za građevinarstvo i geodeziju, Fakultet tehničkih nauka, Novi Sad

Tehnički urednik zbornika radova:

Ivan Lukić

Izdavač:

Departman za građevinarstvo i geodeziju, Fakultet tehničkih nauka, Novi Sad

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Branislav ANTONIĆ<sup>1</sup>

Aleksandra ĐUKIĆ<sup>2</sup>

Tijana VUJIČIĆ<sup>3</sup>

## THE TRANSFORMATION OF THE ROLE OF DEMOGRAPHIC DECLINE IN THE RESEARCH OF URBAN SHRINKAGE

**Abstract:** Demographic decline is traditionally considered as the most prominent indicator of the globally presented phenomenon of urban shrinkage. However, in-depth research of this phenomenon implies that the demographic indicators cannot be simply positioned as consequences. Some of them are more the causes of urban shrinkage and the third ones have the features of both of them. The aim of this paper is to present the current knowledge regarding the role of demographic decline in the phenomenon of urban shrinkage. In accordance to the aim, the paper results with the better determination and categorisation of the main demographic indicators in this currently widespread phenomenon.

**Key words:** Urban shrinkage, demography, demographic decline, indicators, categorisation

## PROMENA ULOGE DEMOGRAFSKOG OPADANJA U ISTRAŽIVANJU URBANOG OPADANJA

**Sažetak:** Demografsko opadanje se obično smatra najvažnijim pokazateljem urbanog opadanja, pojave prisutne širom sveta. Ipak, podrobnije istraživanje pojave posredno govori da demografski pokazatelji ne mogu jednostavno biti svrstani među njene posledice. Neki od njih su više uzroci, dok neki imaju odlike i jednog i drugog. Cilj ovog rada je da predstavi trenutna saznanja o ulozi demografskog opadanja u pojavi urbanog opadanja. U skladu sa tim ciljem, ishodi rada su vezani za bolje određenje i kategorizaciju glavnih demografskih pokazatelja u ovoj danas raširenoj pojavi.

**Ključne reči:** Urbano opadanje, demografija, demografsko opadanje, pokazatelji, kategorizacija

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<sup>1</sup> Teaching assistant, Dr., University of Belgrade – Faculty of Architecture, antonic83@gmail.com

<sup>2</sup> Associate Professor, Dr., University of Belgrade – Faculty of Architecture, adjukic@afrodita.rcub.bg.ac.rs

<sup>3</sup> Senior Teaching Assistant, Dr., University of Banja Luka - Faculty of Architecture, Civil Engineering and Geodesy, tijana.vujicic@aggf.unibl.org

## 1. INTRODUCTION

Urban shrinkage has arisen into the common pattern of urbanisation in last decades. Demographic decline is usually pointed as the key determinant to notice shrinking patterns in a city [11]. It is estimated that every fifth city is shrinking by population loss [22]. However, urban shrinkage cannot be described merely through demographic aspect – this is a far more complex phenomenon, where multiple factors are interconnected and visible in urban space [4] (Fig. 1 and 2). Two of them are regarded as the most significant ones: economic and demographic decline. Traditional research in shrinking cities also positions them as mutually opposite by their mean in this phenomenon: economic problems are usually the main cause of urban shrinkage, while demographic decline is its major consequence [12; 9].



*Figure 1 – Emptiness of the historic core of Gorizia, shrinking city in northern Italy (Author: B.*



*Antonić); Figure 2 – A derelict building in shrinking Kaunas in Lithuania (Author: B. Antoni*

Nonetheless, this dichotomy is more intricate. This is especially visible for demographic decline. Demographic decline is also crucial element to be scientifically observed in shrinkage process at the other territorial levels – national, regional or sub-settlement level. In the case of urban shrinkage, many demographic indicators can be clearly named as the consequences of urban shrinkage; population ageing and the decrease of educational attainment are good examples. As a contrast, immigration and brain drain are mostly the causes of urban shrinkage. Finally, the decrease of birth rate can be seen both as a cause and consequence. Falling birth rate in an urban area certainly influence negatively on the prospects of local economy by the reduced number of employees. In the other side, it can be a consequence, too; with limited options in declining local economy, birth rates usually follow decreasing patterns. Then, many demographic indicators, such as unemployment or poverty rates, are not solely in this field; they are also linked to the economic and social aspects of urban shrinkage. Therefore, the process to determine and categorise demographic indicators is becoming increasingly complicated.

The aim of this paper is to present the current knowledge regarding the role of demographic decline in the phenomenon of urban shrinkage. In accordance to the aim, the paper results with the better determination and categorisation of the main demographic indicators in this currently widespread phenomenon.

## **2. METHOD**

Taking in account the explained aim, this scientific work is organised as a review paper, but it reviews the already acquired knowledge in a new way. The organisation of the paper is outlined to challenge the traditional view of demographic decline as the consequence of urban shrinkage, by comparing the traditional and newer stances relating demographic decline in urban shrinkage. All discussed issues are further supported with showcases. It is expected that this comparison will contribute to the better determination and categorisation of the main indicators in the demographic decline within urban shrinkage.

## **3. TRADITIONAL ROLE OF DEMOGRAPHIC INDICATORS IN URBAN SHRINKAGE**

Urban shrinkage and shrinking cities as research terms gained their international scientific recognition by the emphasising population decline. Being the main among early supporters of both terms, Philip Oswalt [10] named population loss as a key element to identify shrinking cities. This stance has become common in the later research. In line with this, many researchers have even considered demographic and urban shrinkage as equivalents. Hence, some recent scholars warn about a possible mislead to research urban shrinkage solely through demographic patterns [5].

Demographic decline is similarly complex phenomenon as an urban shrinkage. Two major indicators of the demographic decline are negative birth rate and emigration.

NEGATIVE BIRTH RATE is strongly attached to developed countries in the West. The linkage between negative birth rate and the widespread of urban shrinkage has been noticed a long time ago. Europe is probably the best case to explain it. The whole continent has been affected by falling birth rates for decades. It is the only continent with negative birth rate, too. Additionally, Europe has also the highest concentration of shrinking cities globally [17].

The decrease of birth rate to sub-replacement level is a consequence of the second demographic transition in the West, which started in the 1970s. This trend encompasses several minor trends, such as: a multitude of living arrangements other than marriage, a

disconnection between marriage and procreation, and no stationary population [20]. More than 40 countries in the developed part of the World are in this situation for the moment being [8]. In urban studies, the influence of the second demographic transition is best shown in the overspread urban shrinkage in the 'caught' countries [21].

EMIGRATION is the second important indicator of demographic decline. It can be observed at micro- and macro-level. The micro-level emigration is from a (central) city to suburbia and causes urban sprawl. The macro-emigration refers to the emigration from one city to another one [19]. The first type of emigration is still internal one, considering the entire urban area. The second type is much more severe and it is more prominent relating urban shrinkage. This is especially visible today; with all rapid modern transport types and the completely interconnected Earth, distances are becoming less and less an obstacle to emigrate. Regardless distances, (e)migrations extraordinarily indicate the relations between the state of urban economy and the quality of urban life. The city-state Singapore is a positive example for this; although it is among the countries with lowest birth and fertility rates, Singapore is constantly growing due to strong economy, which fuels external emigration.

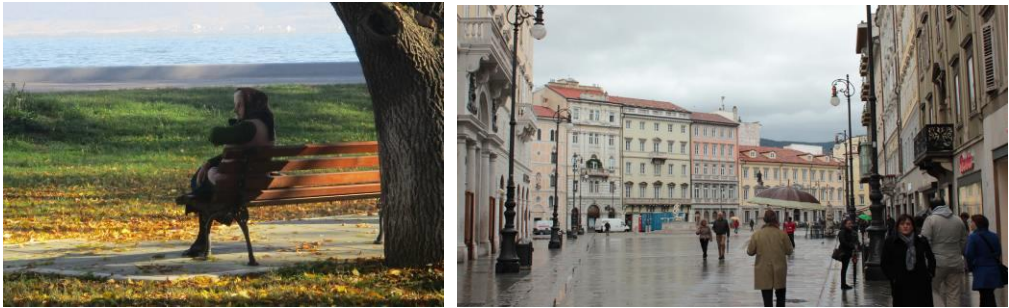
However, opposite examples are more frequent. Many cities have negative migration ratios, which challenges their overall demographic growth. In the case of shrinking cities, the problems in local economy usually cause emigration [16]. The problem is even bigger, because mostly younger and more educated population contingent emigrates from shrinking cities with limited economic prospects [1].

The significance of immigration for urban shrinkage can be easily proven in the case of Eastern-European countries. All countries in this region have negative fertility rates, albeit they are pretty similar – from 1.25 in Moldova to 1.75 in Russia in 2015 by the World Bank prospects [23]. However, the percentage of shrinking cities varies greatly – from 53% in Poland to 95% in Bulgaria in 2015 [15]. Shrinking cities can be very diverse by demographic and economic performance even at national level [2].

The emigration of younger population also means the rampant AGEING of the left population in shrinking cities [16]. This is further attached to longer human life in developed countries. Japan is an excellent illustration for this. 28% of Japanese population is under 65 years. Therefore, many Japanese cities are both shrinking and ageing rapidly. This is especially evident in the rural parts of the country and at the edge of Japan archipelago, such as in the northern and less inhabited island of Hokkaido [3]. Similar problems with ageing population exist across Europe, too (Fig. 3). Elderly population in shrinking cities is also more prone to the other negative tendencies, such as the increase of poverty in these cities [19]. Then, it is also more vulnerable to the measures that are a common response to urban shrinkage, such as population reallocation from the most affected places by urban shrinkage (semi-depopulated buildings/quarters) to the other ones.

A good example to explain the link between urban shrinkage and population ageing is Trieste in Italy (Fig. 4). From the 1970s, Trieste has experienced a sharp urban shrinkage, reflected through population loss by 25%. Nowadays, the city population has critical 46 years in average or four years more than average for Italy (which is already very high). Pensioners make 28% of Trieste population, resenting the most often "profession" in the city [6].





*Figure 3 – Elderly people are very frequent across Europe (Author: B. Antoniĉ); Trieste in Italy is a showcase for both urban shrinkage and population ageing (Author: B. Antoniĉ)*

Side by side with the aforementioned negative tendencies, the minor ones also happen in shrinking cities. For example, population in shrinking cities usually become less educated. As it was, shrinking cities face significant brain drain [13]. The problem is also related with their size. For example, smaller shrinking cities in the USA has not experienced the noticeable the improvements in the education attainment of local population in the last decades [14].

#### **4. REVISED ROLE OF DEMOGRAPHIC INDICATORS IN URBAN SHRINKAGE**

The given demographic indicators are explained in traditional manner, which has been triggered by the recent research by the concept of shrinking cities. The main insights are the following:

**BRAIN DRAIN:** Emigration was early enlisted within the demographic causes of urban shrinkage. The brain drain, which is very common in shrinking cities, is particularly problematic, because the younger and better educated people are an essential population contingent for desired resurgence and reurbanisation of shrinking cities [10; 14]. With the rise of globalisation, the pattern of migration has evolved into the global transfer of population. Shrinking cities are big losers in this process; they are not just the source of emigration, but they are not also the final destination of foreign migrants who potentially can fulfil the created ‘demographic gap’. New immigrants are usually oriented towards major growing cities, which enable easier adaptation due to their higher ethnical diversity and better network with the rest of the World [7].

**POPULATION AGEING:** Generally speaking, the problem of population ageing perfectly mirrors into the economic perspectives of shrinking cities in negative way. Elderly population is mostly in retirement age and it is economically dependent thereof. This makes the further pressure on local budget and limits even more the chances for local redevelopment [18]. Thus, population ageing is one of the main problems for the functioning of shrinking cities [22]. UN Habitat even examines urban shrinkage and the ageing of urban population together in its reports.

**THE DECREASE OF EDUCATION ATTAINMENT:** It seems that the roles of the mentioned demographic indicators are moving in circle; with the decrease of younger population in working age (18-65 years) the number of children decreases also. This consequently implies the worsening state of local finances and thereby the rationalisation of schools and educational profiles. In accordance with this, remaining children/pupils have the diminished possibilities for education and professional progress in the future, which triggers the further urban shrinkage [13].

## 5. CONCLUSION

The explained dichotomy between demographic indicators as the causes and consequences of urban shrinkage in the paper clarifies that they can play both roles. Demographic indicators can relatively often be the causes, but in the way to prolong or even intensify already present urban shrinkage, as it was concluded in the previous section. Economic indicators are still the main cause for the appearance of urban shrinkage.

These new findings require new approaches in the concept of shrinking cities. They can be framed in the following recommendations:

- First of all, the demographic data and patterns of shrinking cities had to be examined from different positions, leaving the traditional approach, where they are mainly treated as the consequences of urban shrinkage;
- The different tools had to be developed to investigate two kinds of the demographic data of shrinking cities; the first ones where urban shrinkage is appearing and the second ones where it is already established process. In the second case, demographic causes are more prominent and more significant for the further research thereof;
- Better research of the interconnection between economic and demographic is necessary. Both factors are the main for the phenomenon of urban shrinkage, but it seems that concrete investigations usually prefer demographic analysis. Economic ones are pretty rare.
- The character and pace of immigration in shrinking cities appear to be the most challenging demographic indicator for the concept of shrinking cities due to its fast and hardly predictable changes in contemporary globalised World.

In all given recommendations, it is also important to be regionally and nationally 'sensitive'. In this paper, it is clear that the current demographic patterns differently affect cities in different countries. At the end, this conclusion confirms the necessity of deeper regional and national research of the demographic trends and characteristics in shrinking cities.

## 6. ACKNOWLEDGEMENT

This paper was completed within National research projects No 36034 and No 36035, financed by the Ministry of Education and Science of the Republic of Serbia.

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