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Suburbanisation as a factor in increasing life expectancy

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Abstract

Suburbanisation as a factor in increasing life expectancy

The range of various options for the development of the suburban territory in the area of agglomeration is extremely wide. It covers both traditional forms of inclusion of suburban space in the city's sphere of life, as well as new ways of interaction between the city and the suburbs. In this paper, we consider a specific form of spatial organisation — suburbia and its impact on the quality of life and, as a result, on the life expectancy of the population.

The purpose of the article is to study the modern process of suburbanisation, as a phenomenon and its impact on increasing the life expectancy of the population, analyse the conceptual apparatus in the concept of lifestyle, and consider a complex of problematic issues of the urban environment that pose a risk to public health. We research the positive and negative effects of suburbanisation and identify the main factors influencing the suburbanisation process.

To solve the problems, the following methods were used: analysis, synthesis, systematisation, comparison, rating.

It is shown that the management of the processes of the formation of human habitat is now the most important, and perhaps the main task, without the solution of which it is impossible to effectively ensure optimal conditions for a person.

Introduction

In the modern world, urbanisation processes are global and comprehensive. Urbanisation is a phenomenon associated with the steady growth of cities and

a widespread urban lifestyle. The urban way of life has great potential for the development and self-realisation of a person, the city also has higher values of the quality and standard of living. Moreover, the quality of life itself includes such objective and subjective factors as the state of health, life expectancy, environmental conditions, nutrition, home comfort, social environment, cultural and spiritual needs, psychological comfort, etc.

However, from the second half of the 20th century, spatial processes have changed this trend in the direction of population migration from the city to the suburbs. This is caused by a number of factors of an economic, environmental, and social nature. Suburbanisation is the next stage after urbanisation, as a result of which urban agglomerations are formed. In essence, suburbanisation is a process leading to the outflow of population from cities to suburban areas.

— The reasons for this process are:

— high density of cities and depletion of their territorial resources;

— high cost of quality property in the city;

— the desire to live in your own home in a comfortable natural environment;

— negative environmental conditions;

— social problems;

— the desire to get away from the stresses of the big city. Suburbanisation is a stage of socio-economic development, which is also caused by the growth in living standards of the population, which allows you to have a house with a plot of land at a distance from the city centre, but allows you to continue to work in it, extending the features of the urban way of life to the suburban territories.

Theoretical framework of the research

Modern times dictates the need for the formation of a new conceptual apparatus, which require detailed consideration in the framework of the current research.

Lifestyle — a method and form of individual and collective life activity of a person typical of concrete historical socio-economic relations, characterising the features of his/her behaviour, communication, and mentality. In other words, a way of life is an established form of a person's being in the world, which finds expression in his activity, interests, and convictions (Lisitsyn, 1982). This is due to the fact that the city and the village have their own specific lifestyle features.

For example, rural settlements are characterised by: low population density in a limited area, a measured and unhurried rhythm of life. While the city has a concentration of a large number of inhabitants, a high population density in a limited area, a fast pace of life being its characteristic. The urban way of life has great potential for the development and self-realisation of a person than the rural one, the higher the quality and standard of living that are characteristic of the city itself.

In the concept of lifestyle, four categories stand out that form the following block of concepts:

- economic — “standard of living”;
- sociological — “quality of life”;
- socio-psychological — “lifestyle”;
- socio-economic — “way of life”.

Moreover, the quality of life itself usually means an assessment of a certain set of conditions and characteristics of a person’s life, based on his/her own degree of satisfaction with these conditions and characteristics. It is broader than material security (standard of living), and also includes such objective and subjective factors as health status, life expectancy, environmental conditions, nutrition, domestic comfort, social environment, cultural and spiritual needs, psychological comfort etc. The city, as an integral part of modern civilisation, is the most universal form of the concentration of a variety of resources of a social, political, informational, and administrative nature, which makes it the most attractive form of organisation of life of both the individual and the state as a whole.

The environment of the city is a complex subjective-objective unity. It includes many spatial-functional and behavioural interactions of man and the natural, subject, information and social environment. The environment of the city contains a certain set of elements that have developed during the long historical evolution of its space: squares, streets, alleys, and buildings. The parameters of these elements simultaneously form the urban environment.

Research methodology

Cities, in essence, are historical, cultural, and educational centres with a developed network of social and transport infrastructure, ensuring a high quality of life for the population. The urban environment today is understood as a specific subject-spatial and social situation. It surrounds a person on city streets, in public places, at work, at home — all that makes up the general background. With the participation of all the many components of its elements, the daily life of people in an urbanised space takes place, and all urban processes are also taking place (Gold, 1990).

The urban environment and lifestyle of a large city have certain disadvantages and complications of human life. As urban growth increases, the risks of occurrence and adverse effects on human health increase. The city environment significantly affects the functioning of the human psyche, determining the psychophysiological burden on the body, and provokes a variety of behavioural manifestations. Next, we consider in more detail a complex of problematic issues that carry health risks for the population.

1. The quality of atmospheric air

One of the leading environmental factors, which adversely affects living conditions and health of the population, is technogenic pollution of the air. High-quality atmospheric air is an indispensable condition for a healthy and comfortable life.

However, many types of life, which are associated with the provision of daily human needs and socio-economic development of the country, lead to air pollution. Negative factors in the technosphere reduce the quality of the environment and affect human health. Currently, the problem of ecopathology arises due to physical, chemical and biological factors, which are more of an anthropogenic origin (Revich, 2018). The consequences of the adverse effects of environmental factors on the human body can manifest themselves in different ways. Since the peculiarity of the regulation of atmospheric air quality is depends on the effect of pollutants present in the air on the health of the population not only on the value of their concentrations, but also on the duration of the time interval during which a person breathes this air.

2. Climatic health risks in cities

This factor can arise not only from the peculiarities of the climate in the area, but also from the landscape, the planning structure of the city (such as development), the height of buildings, the degree of greenery and other reasons. Therefore high building density, heavy traffic and lack of green space, all lead to the creation of a heating microclimate in the centre of cities, contributing to the formation of “heat islands” (Revich, 2017). For example, temperature differences between the city centre and peripheral areas can reach 10°C or more, and can also affect the mortality rates associated with heat.

A number of studies have shown that high temperatures and low wind speeds, characteristic of the “heat islands” in various cities around the world, lead to increased mortality. The highest risk values were established for diseases of the circulatory system (hypertension, coronary heart disease) aged 65+, the second largest contribution was neoplasms, and the third was respiratory diseases. The increase in additional mortality with an increase in air temperature for every 10°C in European cities with a temperate climate varies between 1.1–3.7%, in cities with a subtropical monsoon climate — 2.8–3.0% (Appleyard and Lintell, 1972; Gumba et al., 2016). Heatwaves in megacities lead to a larger number of additional deaths from all causes, especially in cities with a temperate continental climate.

Climate change is not only detrimental to public health, but also on living conditions in city apartments. Numerous temperature fluctuations during the year lead to the appearance of “sick” houses: interpanel joints diverge, water seepage, mould occurs, etc., which causes allergies in residents, an increase in attacks of bronchial asthma and other respiratory diseases (Klochko, Klochko, Harutyunyan, 2014).

3. Acoustic risks

The impact of noise of varying intensity, duration and spectral composition is studied mainly in production and in the zones of influence of airports. Studies to assess the impact of traffic noise on the health of citizens have begun to intensify in recent decades and are aimed at identifying early symptoms of the negative impact of this factor, determining the boundaries of the zones of acoustic discomfort (Selander et al., 2009). Elevated noise levels contribute to the development of certain disorders of the nervous system, expressed in cognitive impairment, especially in children, vegetative-vascular dystonia, diseases of the circulatory system (hypertension, myocardial infarction, angina pectoris).

4. Constant stress

In an urban environment, a person is constantly exposed to stress. Sources of stress are numerous and varied, and, as a rule, it is impossible to avoid interaction with them. It should be borne in mind that stress situations in the urban environment are closely related to regional conditions and types of cities.

Stress — negative discomfort caused by the following sources of stress:

material — the most common (noise, vibration, pollution, dust, etc.). J. Gold, based on the work of D. Appliard and M. Lintel, examined the impact of traffic near places of residence on urban behaviour in three areas of San Francisco. It turned out that in the area with “high” traffic intensity, the number of contacts between neighbours decreases, the atmosphere of disorder, anxiety, isolation prevails, residents are indifferent to the appearance of their houses. In areas with “weak” traffic, on the contrary, residents are attentive to the appearance of buildings, position themselves as local, their relations are respectful and friendly (Yarovaya, 2009);

- crowded;
- living in multi-storey buildings.

Of course, the influence of these sources of stress is exacerbated by other characteristics of modern industrial civilisation (Petukhov, 1984).

Residents of a modern city are many times more likely than residents of rural areas and small towns to experience such mental disorders as (Kruzhkova, 2014):

- anxiety disorders of various types;
- depressive disorders;
- adaptation disorders;

and many more.

5. Visual environment

The visual environment is as important an environmental factors, as other factors that influence the creation of a comfortable environment for humans. A person receives most information through vision, so an adverse visual environment can adversely affect a person, causing irritation and even lead to mental illness (Novikova and Povysheva, 2013). Visible objects directly affect us with their appearance. If in the natural environment there are practically no big problems with video ecology, then the urban environment affects us negatively. Modern architecture degrades the visual environment of the city. This is due to the fact that the set of structural elements has changed: a lot uses straight lines, right angles and large planes. In an aggressive and homogeneous environment, fundamental vision mechanisms cannot fully work. It is noted that in urban conditions myopia occurs 1.5–2 times more often than in rural areas (Filin, 2006).

The quality of life of the population in the city is due to better economic and social conditions (higher incomes, higher levels of health care, social protection, education) arising against a background of a complex of risks: high building density, traffic load, stress, health problems. The quality of life of the population in the city according to indicators of life expectancy and mortality rates differ significantly from indicators in other territories.

Analysis of the research results or scientific problem: These negative trends lead to the development of suburban processes that indicate population outflows from cities to the zones of suburban settlement, the causes of the process being: physical overcrowding of city centres and the depletion of their territorial resources; psychological craving for living in your own home in a comfortable natural environment; high prices for good property in city centres; environmental degradation).

The formation of a suburbanised space (suburbia) as an extensive area of permanent residence of citizens in the suburbs has become a qualitatively new option for the development of suburban space (Glazychev, 1984).

The housing built here becomes for the owner the only or, at least, the main one, in it he spends most of his life (Grigorichev, 2012). Maintaining a strong connection with the city in the field of labour, migrants quickly switch the interests of non-work activities to the local space, include it in their daily routine (trade and social infrastructure, service and leisure system).

It is known that the desire to derive maximum profit leads to the use of many agricultural producers in super-permissible doses of chemical and organic fertilisers and catalysts for the growth of plant products, the use of gene-modifying substances and organisms (Baumert, 2015).

However, the development of suburban processes leads to the exacerbation of existing and the emergence of new problems at different levels (Figure 3).

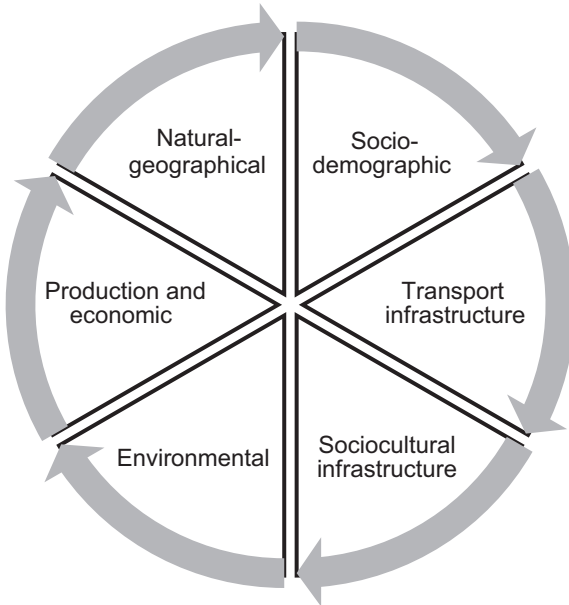


Figure 1. Factors affecting the formation of a network of suburban settlements

Source: developed by the author.

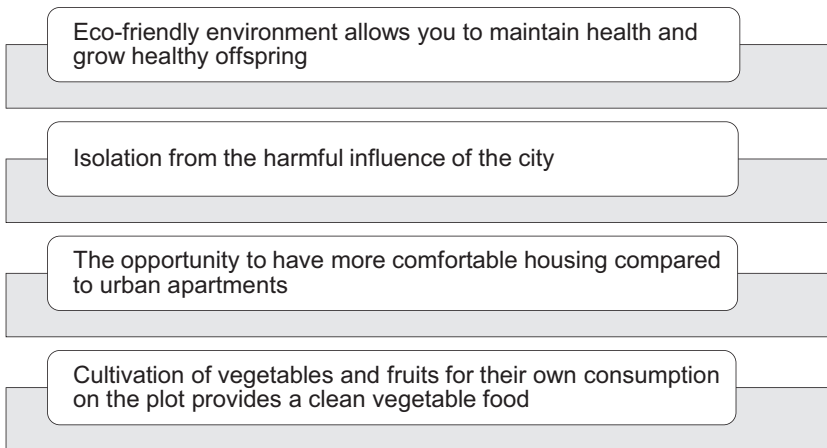


Figure 2. Positive factors for the formation of suburbia

Source: developed by the author.

People choosing a “rural type” of lifestyle in the suburbs, protect themselves from the problems of a big city, forming the conditions for increasing their life expectancy. Numerous studies of population mortality show that the population of large cities is more susceptible to the negative effects of various environmental factors (air pollution, increased noise, excessive density, etc.), as well as stress and an accelerated rhythm of life.

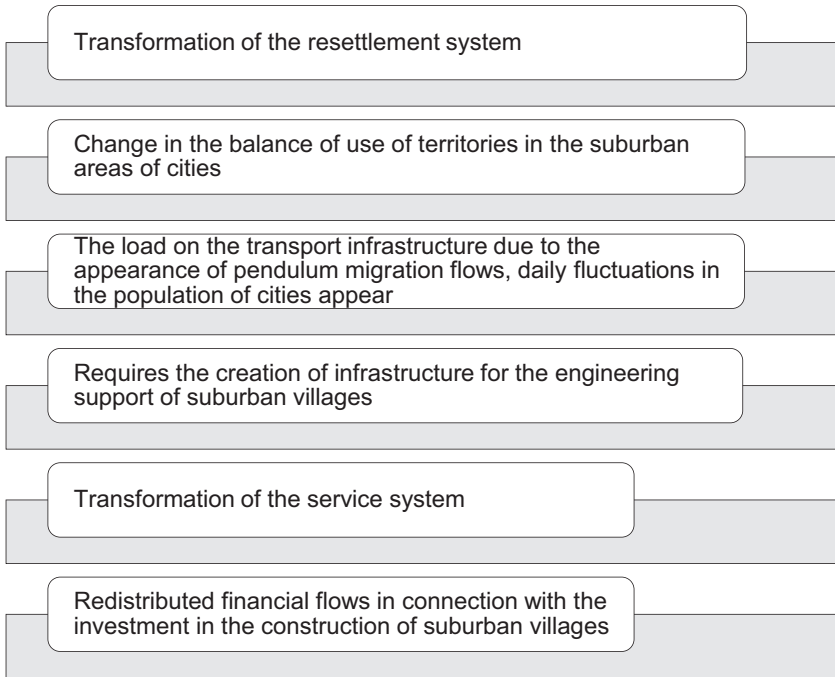


Figure 3. Problems associated with the development of suburban processes

Source: developed by the author.

From a biomedical point of view, the effects of environmental factors in the urban environment are: allergisation (a violation of the immune system associated with the appearance of new substances — pollutants that a person has not previously encountered in the process of evolution); the growth of cancer (radioactive infection, the content of carcinogens in atmospheric air, water and food, the action of strong electromagnetic fields); obesity (overeating, lack of exercise, malnutrition and unhealthy lifestyle); abiological lifestyle trends.

The process of suburbanisation cannot be interpreted unambiguously positive. Suburban residents are addicted to cars. Frequent migration of suburban residents to cities leads to traffic congestion, which leads to air pollution, loss of time and other problems. In addition to transport infrastructure, suburbanisation requires the development of the social sphere, as well as the service sector. Suburbanisation is not the only trend of spatial organisation in the context of increasing human life expectancy. A new trend is landscape-estate urbanisation, a method of settling territories, taking into account the complex of interconnected conditions for comfortable, economically self-sufficient and environmentally friendly living in the new type of villages based on the principles of “eco-development” (Report, 2009).

These territorial entities have a number of features:

1. The maximum size of the settlement should not exceed 5–6 km², which will provide step-by-step accessibility of all the objects of the settlement and will contribute to public health and the environment.
2. The architecture of the settlements should be harmoniously integrated into the natural landscape of the area.
3. The use of autonomous energy-efficient technologies in the construction and operation of residential, administrative, industrial buildings and structures.
4. Compliance with the requirements of integrated environmental safety.
5. The production and economic structure is organised taking into account the creation of the required number of jobs.
6. Self-sufficiency of the economic activity of the settlement.
7. The lifestyle of the settlement should contribute to a healthy moral atmosphere.

The totality of these interconnected requirements for a new type of eco-settlement allows us to solve modern problems of socio-economic development.

Development of an innovative image of rural life should be the main competitive advantage of the regions. The main qualitative characteristic is the organisation in settlements of a new type of living infrastructure and at the same time the economic activities of people aimed at ensuring the reproduction of a biologically healthy population.

The implementation of this approach to spatial settlement will create a comfortable, healthy, harmonious living environment.

Conclusions

Summarising the above, it should be emphasised that urbanisation, with its extremely positive effect, creates a number of unfavourable living conditions for city-dwellers. At the same time, in the foreground are noise, air pollution and living conditions in a big city, which have a largely stressful effect on a person, all this leading to various kinds of diseases, including mental ones.

At the same time, knowledge of the main operating factors and forms of response and human adaptation to these factors allows us to determine the range of measures, supporting mental health and wellness of people. One such form of solving the problems of a big city is the movement of urban residents to the suburbs and thereby the development of a suburbanised area. As a result, this leads to the elimination of overcrowding, an increase in living space per person, a decrease in noise levels and environmental pollution, access to recreation areas, home security, green plantings, increasing the level of physical activity.

Turning to forecasts for the future, it is necessary to emphasise that the management of the formation of the human environment is now the most import-

ant factor, and perhaps the main task, without which it is impossible to effectively ensure optimal living conditions for humans.

Effective control and planning of suburbanised territories is possible only on the basis of knowledge of the objective laws of this development.

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