Multifunctional basis of urbanization as a modern trend in the development of society

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Abstract. The article considers the main features of urbanization, its impact on modern society, the tasks that need to be solved in the process of urbanization. Possible ways of controlling this process are presented. In the modern era of socio-economic transformations and scientific and technological progress, the growth and development of cities, that is, the process of urbanization, is becoming increasingly important in the life of society. The study of the prerequisites and current trends associated with the process of urbanization is important for solving theoretical and practical problems aimed at improving the residential area and the urban environment.

Key words: urbanization, scientific and technological progress, multifunctional urbanization, sustainable development, enterprise capacity, construction industry, development of urban areas, quality and comfort of urban areas

1 Introduction

Today, urbanization has become global. The process of urbanization is to some extent observed in countries with different social systems and different levels of economic development. In various regions of the world, there is a rapid growth of cities, a concentration of population and various activities in them, as well as the spread of urban lifestyles and urbanized forms of settlement. The world is becoming more and more urbanized, the urban population is increasing every day [1].

The rapid growth of the urban population (today the growth rate exceeds the growth of the population as a whole), the increase in the number of cities and their sizes, the role of large cities (over 100 thousand inhabitants in general), the formation of urban agglomerations - all these are the processes of modern urbanization. Also, the processes of modern urbanization include the scale of population concentration and, at the same time, a wide variety of activities, as well as daily pendulum migrations of the population surrounded by large city centers [2].

Urbanization processes can be observed almost everywhere, but they are more intense in small areas that act as centers of urbanization, it is there that all the prerequisites for the further process of urbanization are created.

Urbanization forms a specific way of life, providing favorable conditions for communication, changes professional orientation and increases the special mobility of the population (urbanism).

Large cities and urban agglomerations are a material, material result of the transformation of the natural environment as a result of human activity. This is a specific, urbanized
environment for the life of the population, for the functioning of industrial production and other types of human activity, where man dominates nature [3].

As a result of the formation of a highly urbanized environment, we do not get a city, but a space where a large center is formed as the main core, with large sizes and diverse infrastructure. At the same time, this territory cannot be excessively large. It is limited by the maximum distance at which the population can move (daily labor migration in conjunction with rest at the end of the week).

The process of modern urbanization is closely connected with scientific and technological progress. It is based on the process of concentration of farms with a change in the spatial and urban form of this concentration ("point" is replaced by "areal").

Concentration in the era of scientific and technological progress manifests itself fully and in all its manifestations, being associated with cooperation and specialization, developing in conditions of improving infrastructure [4]. These processes violate the autonomy, create the maximum differentiation of production and the relationship of its various types and industries.

Concentration in the conditions of scientific and technological progress develops on a multifactorial basis and intensive cross-functional interaction (larger scale and high level).

The multifactorial basis of urbanization is a combination of factors of such activities as science, management, information system, retraining of personnel, digital economy [5]. Reception role of these factors is increasingly increasing.

Various types of intangible and scientific activities show high growth rates and rapidly increase their share in the city-forming base of large cities.

It is significant that the absolute increase in the number of people employed in industry in most countries exceeds the absolute increase in the number of people employed in other areas of urban activity.

The development of the industrial sector also entails the manifestation of the negative aspects of urbanization, such as environmental pollution, long travel times, and so on.

Being a rather complex process, urbanization develops under the influence of many factors, the composition and ratio of which varies greatly in different cities and countries.

2 Materials and methods

Consideration of this process by districts made it possible to identify the most important factors:

a) industrial production;
b) non-productive city-forming activity;
c) intensification of agriculture;
d) interfunctional interaction (integration of different types of activities);
e) globalization, the impact of the world economy, the development of international trade;
f) consumption intensification;
g) the consequences of the "population explosion" (in developed countries).

The choice of formation of large cities and agglomerations, the unevenness of their territorial distribution indicates the dependence of urbanization on the geographical differentiation of factors and conditions.

The development of large cities (centers) is the realization of the existing economic potential, which the development of the economy will give certain advantages associated with the territorial structure [6]. This is the role of geographical factors, expressed in the properties of the economic and geographical position of a given center.

Urbanization in a certain way affects various areas:
a) changes in the living conditions of the population, and as a result, a radical change in lifestyle;
b) an increase in the anthropogenic load on the natural environment;
c) a change in the conditions of production and non-production activities, which is confirmed by the model of A. Maslou (Fig.1).

The generalized hierarchy of human needs includes the following steps (levels):

![Hierarchy of Human Needs](image)

Fig. 1. A. Maslou's generalized hierarchy of human needs.

The lower levels are subordinate to the upper ones. All levels included in the model reflect the biological, social and spiritual essence of each person. However, the main existence is the biological essence of man as one of the elements of nature. Therefore, the satisfaction of human needs has the form of a transition from the first level to a higher one, and this transition is directly related to the opportunities that a person receives in the process of urbanization [7].

This is a need in the form of obtaining certain benefits, such as self-realization of the individual, advanced training, satisfaction of spiritual needs, etc.

In the geographical study of urbanization, it is necessary to separate such concepts as "urban structure" and "territorial urbanization".

The urban structure of a region (country) is the ratio (in terms of the number of inhabitants) of urban settlements of various sizes, taking into account the share of large cities [8].

Territorial urbanization - for this characteristic, the ratio and location of territories with varying degrees and rates of urbanization, as well as the scale of development and features of the distribution of highly urbanized clusters, are important, instead of large cities (their geographical position) in relation to the entire territory of the country.

The nature of the territorial-urban structure is influenced by the presence of sea and ocean coasts, large river basins, which contributes to the development of various industries [9].

When considering the process of urbanization in dynamics, it is necessary to take into account and single out its center and evaluate its role for subsequent stages of urbanization development in order to identify existing reserves:

1) territories located outside the economically active space;
2) regional spaces.

There are common regular features of urbanization inherent in all countries with similarities in socio-economic formation.

The most characteristic effects of urbanization in developed countries are:
- achievement of high economic and social effect in the course of urbanization;
- convergence of nations in the process of urbanization;
- absence of socio-spatial segregation of the population in cities and agglomerations;
- overpopulation of cities;
- pushing the population from the countryside to the city due to the ruin of small farms;
- compliance of the growth rates of the urban population with the rates of economic development;
- excessive development of the service sector in big cities.

Thus, we can conclude that the driving force behind urbanization lies in the development of productive forces and production relations and, as a consequence, universality [10]. That is why urbanization expresses general trends in social development, such as:
- continuous differentiation of human activity,
- integration of practice and, on this basis, a growing concentration of population and economy.

The main factors in the development and functioning of any production activity include:

\[ V_{pa} = f(n_1, n_2, n_3, n_4, n_5, n_6, n_7, n_8, n_9, n_{10}) \]  

\( n_1 \) – natural factors;
\( n_2 \) – demographic factors;
\( n_3 \) – historical factors;
\( n_4 \) – scientific and technical factors;
\( n_5 \) – organizational factors;
\( n_6 \) – transport factors;
\( n_7 \) – economic factors;
\( n_8 \) – social factors;
\( n_9 \) – geographical factors;
\( n_{10} \) – state-political factors.

At the same time, special attention must be paid to geographical factors, since the biography studies the features of the earth's surface, taking into account all available resources, natural conditions, the location of the population on it and its economic activity, both as a producer of products and its consumer [11].

The place of the city in the life of society can be considered in terms of social organization and in terms of culture. In terms of social organization, the city is a concentration of social structures, role functions. In the second case, in terms of culture, the city is a concentration of cultural values, certain norms of human activity, the implementation of which ensures the reproduction and development of society [12].

A city or urban space is a system of channels of interaction, mutual influence of people and groups within the city and on the territory of which it is the center [13]. The function of a city is to organize its characteristics, and it can therefore be seen as a morphology (indicators at the level of lifestyle).

The sphere of urbanization is the entire society, the structure of which is focused around a network of urban centers. The volume and nature of the functions used by the maternity hospital in this structure are subject to constant changes, as well as the functional relationships of the center and the network of urban centers around in the organization of the socio-cultural space. Consequently, the functional potential of the city depends on its cultural characteristics and capabilities.

This functional potential contributes to a change in the structure of social production under the influence of the role of science, education, management, service, which act as recognized areas of production. An industrial city concentrates people, capital, tools, and needs in order to multiply the means of satisfying existing needs. The foreground is the formation and development of the needs themselves, the content of which is associated with the type of society and culture [14].
The growing needs of society contributed to the transition to intensive forms of development of all spheres of social production and this requires a more functional and structural universalization of the city, the development of its specific cultural potential, the development of leisure and mass consumption (including information, through mass communication systems). Therefore, the problems of developing the functions of the structure of the city and, as a result, its influence on the process of urbanization of the whole society come to the fore [15].

The strategy for managing the processes of urbanization and their regulation includes such main areas as the development of urban policy and the solution of the tasks of the planned development of the national economy:

1. Restraining the growth of large and powerful urban agglomerations in the interests of the population and the entire national economy. At the same time, ensuring safe and comfortable living conditions for the population, as well as the greening of urban space.
2. Refusal to place new industrial enterprises on the territory of large cities.
3. Modernization of existing plants and factories based on technological progress with a decrease in the number of workers.
4. Placement of new industrial enterprises and branches not in large centers, but in their satellites by forming group settlement systems.
5. The development of small and medium-sized cities, which occupy a favorable economic and geographical position, have labor resources and areas suitable for construction.
6. Reorientation towards the formation of new urban settlements.
7. Further urbanization of rural settlements and changes in the entire lifestyle of their population.

Socio-demographic policy should include the solution of the following tasks:

1. Stimulation of natural population growth through the development of the entire service sector, the expansion of benefits provided to mothers, and the improvement of living conditions.
2. Regulation of inter-district migration throughout the country for the influx of population into areas of promising development (eastern, northern) through a number of measures - increasing wages, better supply of food and industrial goods, outstripping rates of housing and communal and cultural and household construction, improving work on organization, recruitment and retention of personnel in these areas.
3. Providing socio-economic incentives (improving housing conditions), developing the public service sector in cities, as well as improving suburban and urban transport.
4. Measures to create a system for the protection of nature, public health and improving the quality of residential areas;
5. Conservation and development of flora and fauna;
6. Elimination of air, soil and water pollution, as well as noise control;
7. Organization of recreational areas in suburban and urban areas.

The development of urbanization contributes to an increase in the need for volumes of construction production, which is a consequence of the growth in the number of people living in a particular city.

If we turn to statistics, then the growth in the population of the city of Moscow over the past 5 years has averaged 1% (Table 1).

<table>
<thead>
<tr>
<th>Years</th>
<th>Population</th>
<th>Growth in absolute terms (Δ)</th>
<th>Growth in relative terms (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>12228655</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2018</td>
<td>12342615</td>
<td>113936</td>
<td>1.009</td>
</tr>
<tr>
<td>2019</td>
<td>12432531</td>
<td>89916</td>
<td>1.007</td>
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The maximum population growth was observed in 2021 and amounted to 332,033 people, which is significant for such an agglomeration as Moscow. This growth has posed certain problems for the leadership of the region, which must be addressed constantly and in a timely manner.

One of them is the provision of jobs for the entire working-age population. And this task was solved, the number of jobs from 2017 to 2021 increased by 4% or 288,000 and amounted to 8 million.

Due to a certain population growth, there are problems associated with the construction of real estate, since this industry allows solving social problems in providing housing to all residents of the region. Construction provides jobs and salaries for 75% of the residents of the capital, and every 12 resident works in the construction or related industries, that is, more than 1 million people. Analyzing the statistics data, we can conclude that 1 job in construction creates up to 8 jobs in other sectors of the economy - housing and communal services, services and trade.

### 3 Result and decision

Any real estate object requires certain financial investments for its creation and operation, since it is an economic good that can satisfy the needs of not only every person, but society as a whole.

Therefore, there is a certain interest in the sustainable development of this industry, that is, maintaining a constant growth rate in the efficiency of using the full capacity of construction enterprises over time. The cycle of this process can be represented as follows (Fig. 2):

\[
M_{\text{full}} = M_1 + M_2
\]

**Fig. 2.** Full capacity cycle of construction enterprises.

The decrease in power \( M_2 \) (losses) is achieved by increasing the useful power, since the production cycle (process) is always performed between the subject and its natural environment:

- Full power - the potential of the social system (person, organization, society).
- Useful capacity - a real possibility of a social system to influence the human environment.
- The power of losses - the lost opportunities of the social system.

In relation to the construction industry, this may look like this (Fig.3), where:

- \( K_c \) is the coefficient of utilization of the full capacity of construction enterprises in the time of demand for this work in society;
- \( K_t \) - efficiency of tools.

**Fig. 3. Construction Industry Full Capacity Cycle.**

In the process of production of construction products, the enterprise has a set of resources (material, labor, financial), which are measured by the value of \( M \). These resources are used by society, in the conditions of urbanization, to produce material and spiritual benefits. In this case, the ratio \( M_1 / M \) can be taken as a measure of the efficiency of using the full capacity of the enterprise during the time \( t_0 \) within \( 0 < K \leq 1 \). The ratio of the total power \( M \) of a construction company, which is spent to obtain useful power \( M_1 \), can be considered as the potential ability of the organization (system) to expand reproduction (increase in the volume of construction products) and is denoted \( t_n > 1 \).

4 Conclusions

As noted above, with the growth of the population in the world, the problems of settlement and urban development are among the most acute and priority. The formation of a residential area and the urban environment as a whole is a rather difficult task, covering all spheres of human life and activity.

Transport accessibility of various parts of the city, a variety of recreational areas, playgrounds for children and sports, the creation of parking spaces for vehicles - this is only a small part of the issues that arise in the process of forming urbanized territories. The problems listed above are very acute and affect the interests of millions of city residents, since the quality and comfort of the urban area affects the psychological and emotional state, well-being and mood. A high level of formation and development of the city territory should ensure the creation of a modern, safe, comfortable and aesthetically complete urban environment.
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