

THE IMPACT OF URBANISATION ON THE DEVELOPMENT AND DISTRIBUTION OF SOCIAL ZONES

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Abstract: This article analyses the impact of urbanisation on the formation and location of social sectors using the example of the Namangan region, and provides suggestions and recommendations based on the current state of the education system and healthcare system in the region, as well as social urban pressure.

[Yusupov Xasanboy Baxodir o'g'li. **THE IMPACT OF URBANISATION ON THE DEVELOPMENT AND DISTRIBUTION OF SOCIAL ZONES.** *Nat Sci* 2025,23(8):1-4]. ISSN 1545-0740 (print); ISSN 2375-7167 (online). <http://www.sciencepub.net/nature> 01. doi:[10.7537/marsnsj230825.01](https://doi.org/10.7537/marsnsj230825.01)

Keywords: Urban pressure, economic urban pressure, social urban pressure, urbanization, Namangan region, education, medicine, social sphere.

Introduction

Today, the rapid growth of urbanisation, migration to cities, and increasing infrastructure demands are causing urgent problems related to urban development. This is recognised as urban pressure, meaning the excessive strain on city infrastructure, ecosystems, and social systems. Such pressure is linked not only to urban planning issues but also to social justice, economic opportunities, and environmental sustainability.

Literature review

A number of scientists around the world have studied the processes of urbanisation and the formation and location of social spheres, including Morens D.M., Fauci A.S., and in the CIS countries A.V. Avtsin, S.I. Belov, A.G. Varonov, while in Uzbekistan this issue has been studied in detail by N.K. Komilova, Ch.A. Abdiyev, M.I. Nazrov, A.S. Soliyev. In recent decades, the process of urbanisation on a global scale has been developing rapidly. According to the United Nations, today about 57 per cent of the world's population lives in cities, and by 2050 this figure is expected to reach 70 per cent. This demonstrates the relevance of urban pressure at the global level.

Methodology

One of the most noticeable signs of urban pressure in Uzbekistan is the rapid growth in the populations of major cities, especially Tashkent, Samarkand, and Namangan. This results in a housing shortage, traffic congestion, environmental pollution, and declining quality of social services. At the same time, social disparities between the wealthy and the poor in urban centres are widening.

Urban pressure can be categorised into two types:

1. Economic urban pressure

2. Social urban pressure

Economic urban pressure is reflected in the uneven development of the urban economy due to urbanisation, including:

- Rising unemployment, particularly among young people.
- Growth of the informal economy (illegal trade and illegal labour).
- Excessive increases in housing prices.

Social urban pressure encompasses conflicts and restrictions that arise in urban areas concerning the fulfilment of social needs and lifestyles of the population. This pressure mainly occurs because people do not have equal access to urban infrastructure, social services, housing, and community resources.

- As cities grow, the population increases, and issues related to health and education worsen.
- Infrastructure-related problems also intensify.

It remains relevant today to identify social urban pressure within regions and to pinpoint the specific challenges faced in each area. Social urban pressure can primarily be examined through key social sectors, namely health and education services.

The following formula is proposed to determine urban pressure in the education sector:

$$IUB_{\text{education}} = \frac{U(\text{existing student})}{K(\text{capacity of institutions})} * 100$$

Where:

$IUB_{\text{education}}$ – Social urban pressure on education

$U_{\text{existing student}}$ – Total existing students

$K_{\text{capacity of institutions}}$ – Capacity of institutions

The result can be evaluated as follows:

- Below 100% — no or low pressure
- 100–120% — moderate pressure
- 121–150% above — the education system is under an excessive load.

▪151% above — very strong pressure — excessive pressure in this area.

This formula determines the current pressure on the education sector based on the number of

students studying in educational institutions in the region, the educational institutions, and their student capacity.

Table 1. Population of districts and cities of Namangan region

No.	Area	Population (thousands)	Number of schools	Number of students	Current student capacity
1	Namangan city	713,4	126	140339	98660
2	Mingbulok district	139,8	51	23987	17960
3	Kosonsoy district	233,1	58	41386	33990
4	Namangan district	197,1	40	33 501	30260
5	Norin district	179,1	47	29 475	21500
6	Pop district	239,8	74	40 145	36900
7	Turakurgan district	250,7	66	44 364	40620
8	Uychi district	237,6	48	42 049	38900
9	Uchkurgan district	188,7	51	30 993	22584
10	Chortoq district	219,2	59	38 411	36980
11	Chust district	291,4	79	46 038	35800
12	Yangikurgan district	241,8	67	38 761	33990

The table was compiled by the author based on statistical data from the author's own collection.

Results

If the training is calculated and analyzed based on the proposed formula according to the table above:

$$IUB_{\text{education}} = \frac{U(\text{existing students})}{K(\text{Capacity of institutions})} * 100 = IUB_{\text{education}} = \frac{140339}{98660} * 100 = 142,2$$

When determining the pressure on the education sector based on the total number of students in Namangan city and the student capacity of existing schools, this indicator in Namangan city was 142.2%. If we consider the remaining regions, we can see that Mingbulok district has 133.6%, Kosonsoy district 121.8%, Namangan district 110.7%, Norin district 137.1%, Pop district 108.8%, Turakurgan district 109.2%, Uychi district 108.1%, Uchkurgan district 137.2%, Chortoq district 103.9%, Chust district 128.6% and Yangikurgan district 114.0%. It is also possible to clearly show the real pressure in the regions by placing the results on indicators of social urban pressure. As mentioned above, if it is below 100% - there is no or low pressure, 101–120% - moderate pressure, 121–150% high pressure - the education system is under an excessive load, 151% high - very strong pressure - this region is under excessive pressure, if analyzed based on the results, it can be concluded that:

- Below 100%, low pressure or no pressure – there is no such area in the region
- 101%-120%, average pressure - includes Namangan district, Pop, Turakurgan, Uychi, Chortoq, Yangikurgan districts
- 121-150%, high pressure - includes Mingbulak, Kosonsoy, Naryn, Uchkurgan, Chust districts.
- Very strong pressure above 151% - Namangan city

The medical sector is also one of the most important sectors for human health today. The pressure on the healthcare system is also relevant for each region. To determine the urban pressure on the healthcare sector, the following formula can be proposed.

$$IUB_{\text{health}} = \frac{A(\text{population})}{T(\text{beds})}$$

Where:

IUB_{health} – Social urban pressure on healthcare

$A_{\text{population}}$ – Total population

T_{beds} – Beds

When determined by the formula, the result is determined by dividing the population of the area by the number of hospital beds, divided by 5, and multiplied by 100. In this formula, the number 5 in dividing the population by hospital beds, again divided by 5, is determined by the Ministry of Health's "Regulations on the Bed Fund of Medical Organizations and Medical Personnel Standards", which stipulates that there should be 5 hospital beds for every 1,000 population, that is, 1 hospital bed is 200 people, and one hospital can provide services to 15,000 to 30,000 inhabitants. This situation varies depending on the location of the regions.

The result can be assessed by the pressure per bed as follows:

- If the population per bed is up to 200 people - there is no or low pressure
- From 201 to 250 people - average pressure
- From 251 to 300 and above - under load beyond the existing norm.
- Above 350 - very strong pressure - excessive pressure in this area.

Table 2. Information about hospitals in Namangan region and their location

No.	Area	Population (thousands)	Hospitals	Number of hospital beds
1	Namangan city	713,4	49	5969
2	Mingbulak district	139,8	3	515
3	Kosonsoy district	233,1	14	1080
4	Namangan district	197,1	2	858
5	Norin district	179,1	2	386
6	Pop district	239,8	10	1010
7	Turakurgan district	250,7	8	1026
8	Uychi district	237,6	3	746
9	Uchkurgan district	188,7	5	656
10	Chortok district	219,2	4	1382
11	Chust district	291,4	11	1131
12	Yangikurgan district	241,8	7	895

The table was compiled by the author based on statistical data from the author's own collection.

If we calculate and analyze the current social pressure on the medical field using the formulas above:

$$IUB_{\text{healt}} = \frac{A(\text{population})}{T(\text{beds})} = \frac{713400}{3369} = 211,8$$

Using this formula, it can be seen that 211.8 people were counted per dormitory in Namangan city. The analysis of the remaining regions is as follows: Mingbulok 217.5 people, Kosonsoy 264.8 people, Namangan district 229.7 people, Norin 464 people, Pop 237.4 people, Turakurgan 302 people, Uychi 318.4 people, Uchkurgan 339.4 people, Chortoq 199.7 people, Chust 303.4 people, Yangikurgan 291.1 people were recorded in the districts.

The classification is as follows:

- No or low pressure in Chartok district with a population of up to 200 people per bed
- Medium pressure areas with a population of up to 201-250 people include Namangan city, Mingbulok, Namangan, Pop districts.
- Areas with an additional load of 251 to 300 and above include Kosonsoy and Yangikurgan districts.

▪ Areas with an excess load of over 301 people, i.e., areas under extremely high pressure, include Turakurgan, Uychi, Uchkurgan, Chust, and Naryn districts.

Conclusions

From the above analysis, it can be seen that the social urban pressure was analyzed through the education service and healthcare system, there are no areas with low, low pressure or no pressure in the region, the areas with medium pressure include Namangan district, Pop, Turakurgan, Uychi, Chortoq, Yangikurgan districts, the areas with high pressure include Mingbulok, Kosonsoy, Norin, Uchkurgan, Chust districts, and the city of Namangan has a very high pressure, which indicates the need to create places for additional education in areas with high and very high pressure in the education system.

Health system analyses show that the Chartok district is a no-pressure or low-pressure area, the Namangan city, Mingbulok, Namangan, and Pop districts are medium-pressure areas, the Kosonsoy and

Yangikurgan districts are high-pressure areas, and the Turakurgan, Uychi, Uchkurgan, Chust, and Naryn districts are very high-pressure areas, which in turn indicates a need for additional hospital beds in areas with high and very high pressure.

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7/12/2026