



## DYNAMICS AND STATISTICAL ANALYSIS OF THE NUMBER OF CULTURAL INFRASTRUCTURE INSTITUTIONS IN UZBEKISTAN

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### ABSTRACT

This article analyzes the dynamics of the number of cultural infrastructure institutions in Uzbekistan for 2018–2025 based on statistical methods. The object of the study was the republican indicators of museums, theaters, concert organizations, circuses, cultural and recreational parks, zoos, information libraries and information resource centers. The analysis used descriptive statistics, year-on-year comparisons, absolute and relative changes, and trend approaches. The results showed that changes in the number of cultural infrastructure institutions in different directions are not uniform, stability is observed in some segments, and gradual growth or decline is observed in others. Based on the trends identified in the article, proposals are made to strengthen monitoring of cultural infrastructure, deepen data by region, and include quality indicators in assessing the activities of resource centers.

**Keywords:** cultural infrastructure, museum, theater, concert organization, information and library center, information and resource center, descriptive statistics, trend analysis.

### INTRODUCTION

Cultural infrastructure is an important factor in the spiritual and social development of society, in satisfying the cultural needs of citizens and in expanding the market for cultural services. The numerical development of the network of such institutions is directly related to indicators such as the participation of the population in cultural life, the availability of cultural services and territorial coverage, and is of strategic importance in the cultural policy of the state and infrastructure management.

In recent years, official statistical observations on the activities of cultural and art institutions show that there are uneven trends in the number of institutions and the dynamics of their development in different segments. For example, while in some years there were cases of accelerated growth in museums and concert organizations, a relatively stable situation may remain in other areas.

The problem in the context of this article is that the available official indicators on the number of cultural infrastructure institutions are often given in the form of separate periods, but there is a need to summarize them on the basis of a single systematic analysis for the period 2018–2025, compare them by segments, and interpret the main trends in a scientific and methodological form. Therefore, conducting an analysis using descriptive statistics and trend approaches based on data from the republic for 2018–2025 is of practical importance for monitoring cultural infrastructure and future planning.

The main hypotheses of this article are as follows:

1. The overall dynamics of the number of cultural infrastructure institutions in 2018–2025 is not uniform, that is, the growth rates differ significantly across types of institutions.
2. Around 2020, a slowdown or structural “turn” may be observed in some indicators, while in subsequent years the recovery (growth) trend will intensify and there will be differences by period.
3. Changes in the number of information libraries and information resource centers will be more stable than in other institutions or will change gradually under the influence of institutional reorganizations.



To test these hypotheses, the article provides a descriptive analysis of the indicators of the number of institutions for 2018–2025, calculates absolute and relative changes, and summarizes trend characteristics.

### **LITERATURE REVIEW**

Among the local sources on the topic, the official statistical collection occupies a special place. In the materials published by the national statistical bodies, along with indicators for museums, theaters, concert organizations and other cultural institutions, some activity indicators are also given, which makes it possible to monitor the partial functional state of the cultural infrastructure. In particular, the data published by the end of 2025 on the number of museums and their changes, as well as numerical indicators for concert organizations, are important as an empirical basis for analysis.

Domestic scientific and analytical articles cover more issues of preserving cultural heritage, diversifying museum activities, and integrating with cultural tourism. Such studies usually put forward the ideas of the need to develop a network of cultural institutions, improving the quality of services, and improving management approaches.

In foreign approaches, methodological foundations for measuring cultural statistics and infrastructure play an important role. UNESCO's methodological documents on cultural statistics and guidelines on cultural indicators are used as international standards for the statistical classification of the cultural sector, the formation of a system of comparable indicators, and the establishment of monitoring.

These approaches serve as a conceptual basis for the analysis and trend logic describing the indicators of the number of institutions in this article. While official statistics serve to illuminate the quantitative state of the network of cultural institutions, domestic and foreign scientific sources cover more issues of management, cultural heritage, quality of services and methodological standards.

The purpose of this article is to determine the dynamics of the number of cultural infrastructure institutions in Uzbekistan for 2018–2025 and assess the main trends based on statistical analysis. The main objectives of the article are:

1. calculate and compare the annual change in the number of cultural infrastructure institutions;
2. determine absolute differences and relative (percentage) changes between 2018 and 2025;
3. summarize and describe the characteristics of trends by type of institution;
4. interpret the identified trends and develop practical proposals for monitoring and management.

The object of the study is cultural infrastructure institutions operating in Uzbekistan at the republican level, and the subject is the dynamics of changes in the number of museums, theaters, concert organizations, circuses, cultural and recreational parks, zoos, as well as information and library and information resource centers in 2018–2025. The study used descriptive statistics, year-on-year comparisons, absolute and relative changes, as well as trend approaches. These approaches allow for a systematic display of changes in the number of cultural infrastructure institutions, identification of differences in various segments, and creation of a basis for further analysis.

### **METHODOLOGY**

This study was conducted in a quantitative and descriptive-comparative design. The goal is to determine the dynamics of the number of cultural institutions in the period 2018–2025 and to explain trends. The annual indicators in the table provided were taken as the main source of data for the analysis. The object of the study is time series data on the number of the above institutions in 2018–2025. The data was received in the form of a spreadsheet, the column names were standardized, sorted

by year, all indicators were reduced to numerical values, and the values were subjected to logical verification.

The following methods were used in the study:

1. Minimum - maximum, change from the beginning of the period to the end of the period ( $\Delta$ ), change in percentage (%).
2. Identification of year-on-year changes and separation of years with sharp jumps.
3. Time series graphs were constructed for the indicators, and growth, decline, and stability were assessed visually.
4. Growth rates were compared across institutions, and the fastest growing and most declining areas were identified.

To present the results in a clear manner, all indicators were color-coded in one graph; visual alignment was used to display large-scale indicators (libraries and resource centers) and small-scale indicators in one graph. The table represents the number of institutions, while qualitative indicators are included.

## RESULTS

We present the main statistical results obtained on the dynamics of the number of cultural infrastructure institutions at the republican level for the period 2018–2025.

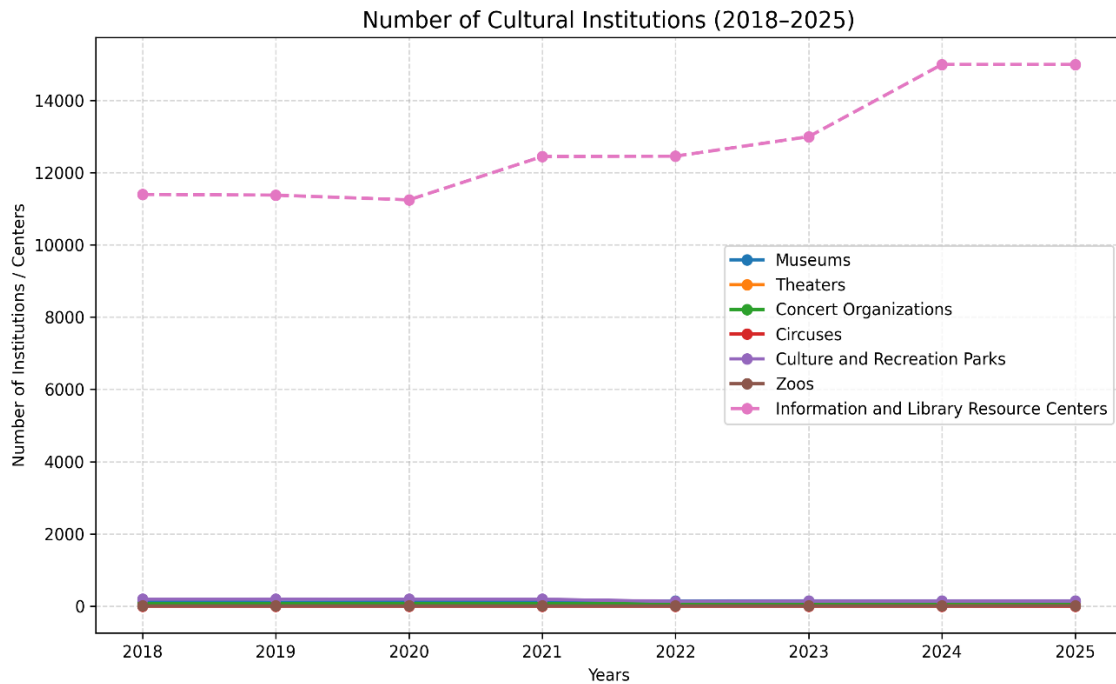
**1-table**

**The main tourist resources (units) of the Republic of Uzbekistan**

Year s	Museu ms	Theat ers	Concert organizati ons	Circus es	Cultural parks	Zoos	Information- library and resources
2018	121	47	66	1	189	3	11622
2019	100	47	67	1	193	3	11587
2020	105	49	72	1	192	3	11385
2021	127	50	69	1	188	3	12500
2022	134	50	70	1	129	3	12518
2023	140	48	81	1	134	3	13046
2024	138	48	98	1	136	3	14999
2025	138	48	98	1	136	7	14999

The period 2018–2025 is also notable as a period of increased influence of various factors on the development of cultural infrastructure (Table 1). During these years, along with institutional changes in the field of cultural services, modernization of infrastructure facilities, organizational measures aimed at meeting the cultural needs of the population, external factors also directly or indirectly influenced the activities of the sector in some periods. Therefore, it is scientifically and practically important to show the dynamics of the number of cultural institutions during this period using statistical approaches and identify the main trends.

We can also illustrate these indicators graphically, which allows for a clearer view and better understanding.



**1-figure:** Dynamics of the number of institutions in 2018–2025 (in the form of a line graph).

As can be seen from the graph, the direction of change varies depending on the type of indicators, some show an increase, some a decrease, and some are stable. If we analyze the indicators in terms of indicators: museums increased by 14% from 2018 to 2025, theaters increased by 2.1% or remained stable, concert organizations increased by 48.5%, and the biggest jump can be observed from 2024 to 2025. There is no change at all in circus organizations, because we know that in many countries the circus operates as one central organization and has high requirements, namely safety, sanitation, licensing. As can be seen, cultural and amusement parks decreased by 28% between 2018 and 2025, the reasons for this can be given in different ways. There are many reasons for this, such as the reclassification of parks in statistics, the closure or de-listing of some parks, temporary non-inclusion due to reconstruction, financial difficulties after the pandemic, and so on. We can see that zoos increased by 133% between 2018 and 2025, which can be explained by increased attention to the development of recreational areas by the state or private sector, policies to increase tourism potential, and infrastructure expansion. We can see that information, libraries, and resource centers increased by 29.1%.

## CONCLUSION

The results of this study showed that the number of cultural institutions in 2018–2025 was growing, stable and declining in different directions. Based on the general picture, it was observed that some segments of the cultural infrastructure are gradually expanding, while others remain almost unchanged. This indicates that the distribution of resources, management models and institutional needs in the cultural system are different.

One of the most important aspects of the results is a significant increase in the number of concert organizations. This growth indicates that mass, mobile and quickly organized forms of cultural services are more in line with the needs of society. Also, the possibility of private sector activity or the expansion of the event market in this direction cannot be ruled out. From a practical point of view, this trend indicates the need for cultural policy and local government bodies to strengthen the territorial event infrastructure.

The high growth in the number of information libraries and resource centers may be associated with digitization, the culture of using information resources, and the expansion of the infrastructure



serving education. This result indicates the increasing integration of the culture and education system. In practice, such centers can fulfill the role of not only a book fund, but also electronic resources, training, information literacy, and a “knowledge center” for local communities. Therefore, the development of this area serves to increase human capital and digital competencies. In contrast, the sharp decline in the number of cultural and recreational parks, especially in 2022, suggests a systemic problem or changes in management and classification. The reason for this decline may be the reclassification of parks to another category, temporary exclusion due to reconstruction, a decrease in financial efficiency, or the impact of urban development processes. In practice, this situation requires a review of the legal status, balance sheet, quality of service provision, and financing mechanisms of parks in the regions, as parks are an important recreational resource that provides meaningful leisure time for the population, supports a healthy lifestyle, and directly affects social well-being.

The sharp increase in zoos observed in 2025 requires a separate discussion. Such a jump may indicate the opening of new facilities, but there is also a possibility that the statistical calculation method or classification of institutions has changed. Therefore, it is important to check this in the future with additional explanatory data. In practical terms, this growth may be consistent with such goals as diversifying tourism and recreation services and expanding family recreation infrastructure.

The fact that the number of circuses has not changed indicates that some segments of cultural services are “centralized” or dependent on high-cost infrastructure. The lack of an increase in the number of institutions in this direction does not mean that they do not have activities; on the contrary, services may be provided through tours, mobile performances or other formats. Therefore, here it would be scientifically more correct to additionally evaluate the “number of institutions” indicator with “volume of services”.

Based on these results, the following hypothesis can be put forward: in the development of cultural institutions in 2018–2025, digital and mass event formats (information and resource centers, concert organizations) will grow faster, while infrastructure-heavy and centralized areas (circus, theater) will remain stable; recreational facilities (parks) will be sensitive to management and classification factors. This hypothesis is generally consistent with the dynamics in the table, but a deeper analysis with additional factors is required to fully confirm it.

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