

Dataset Development of the Spatial Distribution of Historical and Cultural Cities, Towns and Villages in Gansu Province

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Abstract: The information of the historical and cultural cities, towns and villages in Gansu was collected based on the list of the 3 batches of national historical and cultural cities published by State Council, the list of the 7 batches of national historical and cultural towns and villages published by National Cultural Heritage Administration and Ministry of Housing and Urban-Rural Development, and the information of provincial historical and cultural cities, towns and villages of Gansu Province released on the official website of Gansu Bureau of Cultural Heritage. Based on this, the dataset on the spatial distribution of 37 historical and cultural cities, towns and villages was obtained through the collection, editing and verification of the spatial point positions of the 37 cities, towns and villages with the help of "91weitu". The dataset includes the name, municipal administrative division name, county-level administrative division name, town-level administrative division name, type, level, authority of approval, time of approval, batch, longitude, latitude, elevation, etc. of the 37 historical and cultural cities, towns and villages in Gansu. The dataset is archived in .shp and .xlsx formats, and consists of 8 data files with data size of 91.5 KB (compressed into one file with 45.5 KB).

Keywords: Gansu Province; historical and cultural city/town/village; spatial distribution

DOI: <https://doi.org/10.3974/geodp.2025.02.10>

Dataset Availability Statement:

The dataset supporting this paper was published and is accessible through the *Digital Journal of Global Change Data Repository* at: <https://doi.org/10.3974/geodb.2025.02.01.V1>.

1 Introduction

Chairman Xi, Jinping investigated in Gansu from September 10 to September 13 in 2024. He pointed out that Gansu is a province with profound history and culture, and it is necessary to improve the protection of cultural heritages and infuse powerful spiritual strength to modern construction. As of the end of 2024, Gansu had 4 national historical and cultural cities, 8 provincial historical and cultural cities, 8 national historical and cultural

Received: 05-02-2025; **Accepted:** 22-05-2025; **Published:** 25-06-2025

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Data Citation: [1] Du, J. Z., Li, J. Dataset development of the spatial distribution of historical and cultural cities, towns and villages in Gansu Province [J]. *Journal of Global Change Data & Discovery*, 2025, 9(2): 222–228. <https://doi.org/10.3974/geodp.2025.02.10>.

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towns, 6 provincial historical and cultural towns, 5 national historical and cultural villages and 6 provincial historical and cultural villages. A directory of historical and cultural cities, towns and villages on the national level and provincial level in Gansu is summarized in written form on the official website of Gansu Bureau of Cultural Heritage. Compared with the lists of various batches of China's historical and cultural cities, towns and villages, it was found that the directory summarized by Gansu Bureau of Cultural Heritage lacked the names of historical and cultural towns and villages of the seventh batch, mainly involving 1 historical and cultural town and 3 historical and cultural villages.

By now, there have been papers involving the data related to historical and cultural cities, towns and villages. For example, Peng, *et al.* established a dataset of the spatial distribution of 142 historical and cultural cities in China^[1]. Yu, *et al.* constructed a dataset of the spatial point positions of 312 historical and cultural towns and scenic spots in China^[2]. However, these single-type data can not demonstrate the historical and cultural resources of local areas. Therefore, different types of data should be collected and rearranged, and also there are still problems like inconsistent data coordinates, different data fields and incomplete categories at the same time. At present, the openly published data are mainly national dictionaries, with provincial dictionaries not included, unable to show the distribution of the local historical and cultural resources on clear levels. Moreover, the Spatial distribution dataset of 1,598 more Chinese traditional villages^[3] and similar data research approaches also provided the train of thought for the data production in this study.

In the Spatial dataset of historical and cultural cities, towns, and villages in Gansu Province, China, information of the spatial point positions of historical and cultural cities, towns and villages on various levels in Gansu is collected and arranged, with other related information supplemented as well. It aims to provide all-round data, convenient inquiry and clear control through visualization methods to provide basic support for the coordination of the socio-economic development and historical and cultural protection.

2 Metadata of the Dataset

The metadata of the Spatial dataset of historical and cultural cities, towns, and villages in Gansu Province, China^[4] is summarized in Table 1. It includes the dataset's full name, short name, authors, year of the dataset, data format, data size, data files, data publisher, and data sharing policy, etc.

3 Methods

3.1 Data Sources

The study mainly involves 2 types of fundamental data. The first type is the basic data of geographic information, the vector data of Gansu Province and municipal administrative districts from the National Platform for Common Geospatial Information Services^[6]. The second type is the data of historical and cultural cities, towns and villages collected from the official website of Gansu Bureau of Cultural Heritage^[7], the list of the 3 batches of national historical and cultural cities published by State Council, the list of the 7 batches of national historical and cultural towns (villages) released by National Cultural Heritage Administration and Ministry of Housing and Urban-Rural Development^[8], the list of the provincial historical and cultural cities published by Gansu Bureau of Cultural Heritage, and the list of the provincial historical and cultural towns and villages published by Department of Housing and Urban-Rural Development of Gansu.

Table 1 Metadata summary of the Spatial dataset of historical and cultural cities, towns, and villages in Gansu Province, China

Items	Description
Dataset full name	Spatial dataset of historical and cultural cities, towns, and villages in Gansu Province, China
Dataset short name	Hist&CultCityTownVill_Gansu
Authors	Du, J. Z., Northwest Research Institute of China City Development Academy Co., Ltd., hello.dujinze@vip.qq.com Li, J., Northwest Research Institute of China City Development Academy Co., Ltd., 1029349809@qq.com
Geographical region	Gansu Province
Year	1982–2024
Data format	.shp, .xlsx
Data size	45.5 KB (after compression)
Data files	37 items of the project information and spatial distribution data of historical and cultural cities, towns and villages in Gansu
Data publisher	Global Change Research Data Publishing & Repository, http://www.geodoi.ac.cn
Address	No.11A, Datun Road, Chaoyang District, Beijing 100101, China
Data sharing policy	(1) <i>Data</i> are openly available and can be free downloaded via the Internet; (2) End users are encouraged to use <i>Data</i> subject to citation; (3) Users, who are by definition also value-added service providers, are welcome to redistribute <i>Data</i> subject to written permission from the GCdataPR Editorial Office and the issuance of a <i>Data</i> redistribution license; and (4) If <i>Data</i> are used to compile new datasets, the “ten percent principal” should be followed such that <i>Data</i> records utilized should not surpass 10% of the new dataset contents, while sources should be clearly noted in suitable places in the new dataset ^[5]
Communication and searchable system	DOI, CSTR, Crossref, DCI, CSCD, CNKI, SciEngine, WDS, GEOSS, PubScholar, CKRSC

3.2 List Compilation and Review

In the list of provincial historical and cultural cities, towns and villages of Gansu released on the official website of Gansu Bureau of Cultural Heritage, the name and brief introduction of each of them are recorded, with all the information above classified based on the levels (national and provincial) and types (city, town and village). We checked the list of national historical and cultural cities, towns and villages published by relevant department of the State Council on the official website and the list of the provincial historical and cultural cities, towns and villages released by relevant department of Gansu. Compared with the above-mentioned lists, it was found that the directory on the official website of Gansu Bureau of Cultural Heritage lacked Gansu’s national historical and cultural towns and villages in the list of the seventh batch jointly released by National Cultural Heritage Administration and Ministry of Housing and Urban-Rural Development on January 21, 2019. Specifically, it involves 1 national historical and cultural town, namely Hongcheng Town, Yongdeng County, and 3 national historical and cultural villages, namely Hekou Village of Hekou Town, Xigu District, Lanzhou City, Jihong Village of Jieshipu Town, Jingning County, and Luochuan Village of Yonghe Town, Zhengning County. Besides, the directory on the official website of Gansu Bureau of Cultural Heritage wrongly noted Hujia Dazhuang Village, Xinyang Town, Maiji District, Tianshui City as Hujia Dazhuang Village, Maiji Town, Maiji District in the list of the sixth batch of China’s historical and cultural towns and villages^[9].

3.3 Attribute Collation

Based on a systematic review of the list of renowned historical and cultural cities, towns, and villages, the corresponding attribute information is compiled and organized, which includes the name, brief introduction, name of municipal administrative district, name of county-level administrative district, name of town-level administrative district, type, level, authority of approval, time of approval, batch, etc.

3.4 Spatial Positioning

Based on the compiled list of the historical and cultural cities, towns and villages, the 37 cities, towns and villages were searched by “91weitu” one by one, and the accuracy of the searching results of the point positions was verified based on the administrative division information in the attribute data. For the single retrieval result with accurate administrative division, point data would be drawn at the place of the retrieval result, and their names would be noted accordingly. In case of multiple results, point data would be drawn at the correct place selected in accordance with the administrative division information. Based on the retrieval result, all historical and cultural cities, towns and villages in Gansu had a single result, without repeated names. The searched positions of historical and cultural cities and towns were located at the spatial coordinates of the office addresses of the corresponding people’s governments in the published list, and the positions of historical and cultural village were located at that of the corresponding village committees (Figure 1, 2). The point data of spatial positioning include information like name, longitude, latitude, and elevation.

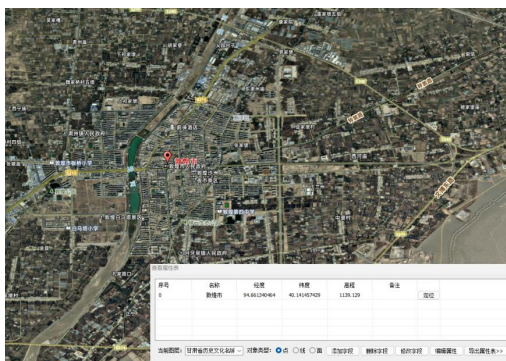


Figure 1 Spatial location map of the national historical and cultural city (example: Dunhuang City)



Figure 2 Spatial location map of the national historical and cultural town (example: Hadapu Town)

3.5 Data Visualization

In this study, “91weitu” was applied to export the point data of spatial positioning in the format of .shp, with GCS_WGS_1984 as the coordinate system. The .shp data exported was then loaded to ArcGIS, and all the attribute information was connected with .shp data based on the noted names for spatial positioning and the corresponding names in the attribute table. The .shp data were verified based on the data of the administrative division of Gansu Province acquired on the National Platform for Common Geospatial Information Services to ensure that all point data were within the scope of Gansu’ administrative division. ArcGIS software was used for spatial visualization, producing a map of the distribution of the historical and cultural cities, towns and villages in Gansu (Figure 3).

4 Data Results

4.1 Dataset Composition

The dataset includes the information of national and provincial historical and cultural cities, towns and villages in Gansu. As of 2024, 37 sub-items had been collected. The dataset consists of 2 components: spatial distribution data of historical and cultural cities, towns, and villages in Gansu Province (.shp format), and the attribute table data (.xlsx format). The attribute fields of the records are shown in Table 2.

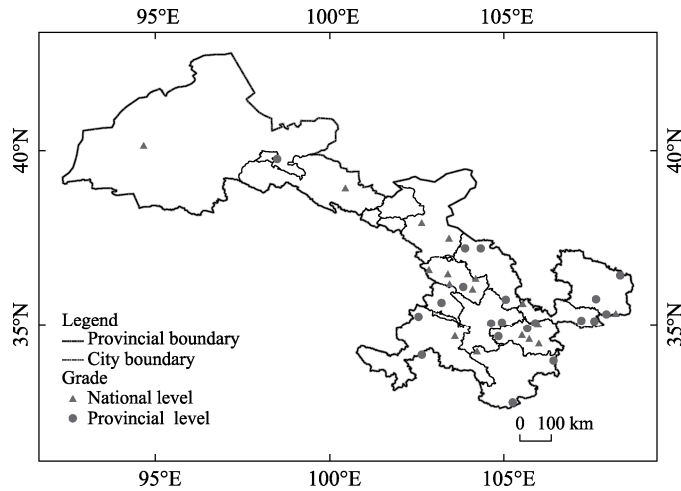


Figure 3 Distribution map of the historical and cultural cities, towns and villages in Gansu

Table 2 Attribute fields and definitions in the dataset

No.	Field name	Definition of term	Example of field
1	Index	S/N	18
2	Name_C	Name (Chinese)	临潭县新城镇
3	Name_E	Name (English)	Xincheng Town, Lintan County
4	CityName_C	Municipal administrative district name (Chinese)	甘南藏族自治州
5	CityName_E	Municipal administrative district name (English)	Gannan Tibetan Autonomous Prefecture
6	CouName_C	County-level administrative district name (Chinese)	临潭县
7	CouName_E	County-level administrative district name (English)	Lintan County
8	TownName_C	Town-level administrative district name (Chinese)	新城镇
9	TownName_E	Town-level administrative district name (English)	Xincheng Town
10	Type_C	Type (Chinese)	历史文化名镇
11	Type_E	Type (English)	Historical and Cultural Famous Town
12	Grade_C	Level (Chinese)	国家级
13	Grade_E	Level (English)	National level
14	Agency_C	Authority of approval (Chinese)	住房和城乡建设部、国家文物局
15	Agency_E	Authority of approval (English)	Ministry of Housing and Urban Rural Development, National Cultural Heritage Administration
16	Time_C	Time of approval	2008-12
17	Batch_C	Batch (Chinese)	第四批
18	Batch_E	Batch (English)	The Fourth Batch
19	Long	Longitude	103.5934492
20	Lat	Latitude	34.67267733
21	El	Elevation	2,742.515

4.2 Data Products

4.2.1 Quantitative Analysis

Totally, Gansu Province has 37 historical and cultural cities, towns, and villages. In terms of types, they can be divided into historical and cultural cities, historical and cultural towns,

and historical and cultural villages, which are 12, 14 and 11, respectively. According to their levels, they can be divided into the national level and provincial level, which are 17 and 20, respectively. Figure 4 reveals the comparison results of the number of historical and cultural cities, towns and villages in accordance with types. Besides, it can be observed that statistically, historical and cultural towns > historical and cultural cities > historical and cultural villages. Figure 5 demonstrates the statistics based on the levels, and it is obvious that statistically, provincial level > national level.

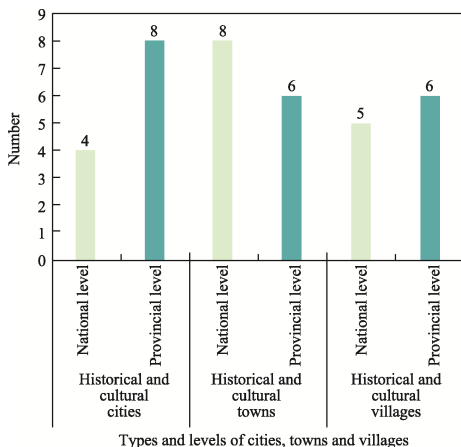


Figure 4 Category-based comparison chart

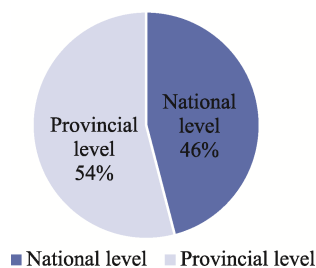


Figure 5 Level-based comparison chart

4.2.2 Spatial Distribution

Gansu Province has 37 historical and cultural cities, towns and villages in total, with the largest number of 7 in Tianshui City, and 0 in both Jiayuguan City and Jinchang City. In terms of the layout of spatial distribution, Eastern Gansu has more of them compared with Hexi Region, with the number declining from the east to the west. Specifically, there are only 5 in five cities of the Hexi Region, 14 in three cities of Eastern Gansu, 12 in four cities of Middle Gansu, and 6 in two cities of Southern Gansu. In the perspective of levels, there are 4 of them on the national level and 1 on the provincial level in 5 cities of the Hexi Region, 6 on the national level and 8 on the provincial level in three cities of Eastern Gansu, 5 on the national level and 7 on the provincial level in four cities of Middle Gansu, and 2 on the national level and 4 on the provincial level in two cities of Southern Gansu.

Table 3 Statistical table of historical and cultural cities/towns/villages by prefecture in Gansu Province

City/Prefecture	Number	City/Prefecture	Number
Baiyin City	3	Qingyang City	4
Dingxi City	2	Tianshui City	7
Gannan Tibetan Autonomous Prefecture	3	Wuwei City	2
Jiuquan City	2	Zhangye City	1
Lanzhou City	6	Jiayuguan City	0
Linxia City	1	Jinchang City	0
Longnan City	3	Total	37
Pingliang City	3		

5 Discussion and Conclusion

This study constructed a spatial distribution dataset of historical and cultural cities, towns,

and villages in Gansu Province. Compared with existing single-type spatial datasets, this dataset focuses on Gansu Province as the study area, integrates spatial data for 37 historic-cultural resources (12 nationally/provincially historical and cultural cities, 14 historical and cultural towns, 11 historical and cultural villages), establishes a multi-level, multi-type spatial database of cultural heritage resources, providing foundational data for systematic research on regional-scale historic-cultural resources.

This dataset not only enhances understanding of the spatial patterns of Gansu's historical-cultural resources but also provides scientific support for regional conservation and adaptive reuse decision-making. Moreover, this dataset can directly support key applications in territorial spatial planning, including the delineation of historical and cultural conservation zones and the analysis of resource distribution patterns. It also enables spatial overlay analysis with diverse datasets, such as tourist attractions, traditional villages, rural tourism resources, and intangible cultural heritage records. This integration facilitates synergistic development between heritage preservation and tourism, promoting sustainable cultural resource management.

Author Contributions

Du, J. Z. established the dataset, collected and processed data, and wrote the data paper. Li, J. contributed to the data verification.

Conflicts of Interest

The authors declare no conflicts of interest.

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