



A STUDY ON THE MORPHOLOGY OF LARGE-SIZED HANDICRAFT STREETS: THE CASES FROM CHINA

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Abstract

China's rich tradition in crafts has given rise to city blocks known for the production, display, and trade of handicrafts. This study focuses on large-sized handicraft streets, particularly those showcasing stone and wood carvings, which stand out in the urban landscape. The research utilizes multiple case studies, combining satellite maps, urban traffic data, and architectural analysis, to explore common and distinctive patterns in the morphology of these craft streets. The findings reveal that these streets are primarily located on the outskirts of cities but have good accessibility for cars, offering large-scale spaces. Additionally, they exhibit variations in streetscape, urban block pattern, and architectural spatial form, allowing for categorization. Understanding the morphology of large-sized craft streets can contribute to preserving and promoting cultural heritage and creative industries.

Keywords: Handicraft street, Large-sized, Streetscape, Urban block pattern, Spatial form.

Introduction

In the context of industrialization and technological development, along with the rapid marginalization and disappearance of many folk crafts (Gibson, C., 2016; Li, N., Yang, S., & Hua, Y., 2023), the corresponding handicraft streets have also moved away from their geographic location in the commercial center of the city and are facing the fate of neglect. However, with the development of the city and the improvement of residents' education level, handicrafts and folk arts have regained the attention of some culture and art lovers (Li, M., & Chen, D., 2014). On the other hand, as the protection, inheritance and development of folk arts and crafts have become an important element of the world's cultural diversity and important connotation support for the development of cultural and creative industries in countries all over the world, the physical environment space carrying it has naturally received attention from all sides (Panda, D. K., 2009; Azharunnisa, A., Gupta, S. and Panda, S., 2022). Since 2004, the UNESCO Creative Cities Network "World City of Crafts and Folk Art" has been selected; the World Craft Council awards the "World Craft City" to several cities with craft industry potential every year.

As Sitte, C. (1979) emphasizes in his book "The Art of Building Cities", "all places where people are concentrated in the open air are works of architecture", citing Vitruvius' statement that "the colonnades shade the silversmiths' stalls, and the second floor of the colonnades has balcony-like protrusions, which are always the most lively places, thus ensuring a certain amount of public revenue". They were always the most lively places, thus ensuring public taxation." To some extent, this reflects the close connection between the artisanal streets and public life in the past. While current academic research has focused more on craft cities (Farman, H. A., Soleh, S. M., Ari, A., & Rahmat, T. A., 2019; Huh, D., Chung, S. H., & Lee, B. M., 2020), some scholars have already focused on craft streets and urban morphology. Since Erik Cohen (1995) proposed that the handicraft industry develops along the belt with the example of Thailand's handicraft street, scholars such as Greg Richards (2005), Naduni Wickramaarachchi, et al. (2022) and other scholars have used the empirical studies in Spain, India, and Sri Lanka to validated the urban development pattern of this type of crafts street. In addition, in terms of reticulated neighborhoods, Sharon Wohl (2015) and Vahid Eilaei, İşik Aksulu (2023), et al. provide an in-depth analysis of the characteristics, features, and socio-physical relations of the spatial formation of this handicrafts street, using the historical bazaar complexes of the Grand Bazaar of İstanbul and Tabriz, respectively, in their studies. What's more,

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in practice, craft-oriented creative placemaking in streets and blocks has long been in full swing (Zhang, L., & Zhu, W.Y., 2021a; 2021b; 2022), and craft-related spaces for making, displaying, selling, or experiencing have been extended and expanded with the changing times. In recent years, one can always see some unique urban handicraft cultural landscapes throughout China. Among them, the large-sized handicraft streets, represented by stone and wood carvings, where the scale of handicrafts is larger than or equal to ordinary furniture, are particularly striking. These are the research objectives that are the focus of this paper. The research questions of the article focus on exploring the dynamics of its morphological and historical evolution.

Therefore, the spatial morphology and dynamics of such craft streets are systematically sorted out and studied, and to a certain extent, a neglected spatial phenomenon with great potential is transformed into a scientific question that can be studied, namely (a) what kinds of large-size craft street morphology are there? (b) Is there a difference between the forms of different periods? (c) Why did such forms appear and change? The content is also developed and added to the existing theories to propose the contemporary morphological patterns of the different stages of development of large-scale craft streets.

The paper is divided into four parts. The first chapter reviews the current situation. The second chapter specifies the three types of research objects distinguished by craft types that are included in China's large-scale craft streets. The third chapter introduces the elemental analysis methods used in the study based on literature research and field surveys. Chapter 4 discusses the results and points out the main contributions of this paper.

Literature Review - Specific Content of Large-sized Handicraft Streets

Unlike handicraft streets where cloth clothing or jewelry are the main items for sale, Large-sized Handicraft Streets are dominated by large handicrafts that are larger and heavier than human scale. These handicrafts are usually stone carvings, root carvings, and mahogany furniture in China. For the selection of representative cases of large-size handicraft streets, the study referred to the neighborhoods where the relevant categories in the Craft Revitalization Catalogue are located and took into account the nationwide visibility factor of handicraft streets, and selected a total of 35 streets, including 13 stone carving streets, a total of 11 wood carving and root carving streets, and 11 mahogany furniture clusters. The research objects not selected belong to those that do not meet the definition, mainly in the following two cases: (a) although there are handicraft traditions or large stone and wood carving attractions, but no industrial street clusters, for example, Beijing Fangshan Chinese Stone Carving Art Park, Shaanxi Yulin Suide stone lion hometown and Yichun China Forest Capital Wood Carving Park; (b) although the formation of industrial street clusters but the scale of handicrafts is small, such cases are common in wood carving streets, for example Xiangyou Pontou Chiho community Buddha beads a street, Yueqing Liushi town Pan Yang after cross village boxwood carving a street, a stone carving street in Zhejiang Qingtian stone carving market also belongs to this situation.

The following will introduce the selection, distribution and spatial patterns, and streetscape characteristics of these large-size craft streets by three categories: stone carving, wood/root carving, and mahogany furniture.

Stone Carving Streets

Chinese stone carving art has a long history, the existence of several Chinese stone carving townships, of which four recognized cities are Hebei Quyang, Shandong Jiexiang, Fujian Qingtian, and Fujian Huian, there will also be Guangdong Yunfu, Beijing Fangshan two places to join the composition of the six stone carving township. On the other hand, China has jumped to the world's largest stone producer, exporter and consumer since 2005. From the regional distribution of stone processing, in the last 2-3 years specifically to the main stone production areas, Hubei, Fujian, and Henan three provinces of marble and granite processing products production is far ahead. According to statistics, China currently has a certain scale of stone industry clusters in more than 30, mainly in Fujian, Shandong, Guangzhou, Guangxi, Hubei, Sichuan, Guizhou, Xinjiang, and other places (Tong, J., 2022). Among them, Shuitou, Fujian, Guangdong Yunfu, and Shandong Laizhou is the largest stone production area in China at present, with large production scale, many employees, advanced processing technology, and perfect supporting industries, which occupies an important position in China's stone industry. Therefore, combined with the information screened to meet the definition of the stone carving street research object a total of more than 30. However, because more than

half of these streets are mainly sold as stone carving plates, handicraft skills are underrepresented in it. So they are not included in this discussion. A total of 13 stone-carving streets were finally selected for the study (Table 1).

Table 1. Selected Stone Carving Streets of Large-sized Handicraft Streets

| No. | Name of the street | Province | City/County/District | Spatial pattern |
|-----|--|-----------|----------------------|-----------------|
| 1 | QuYang North High-speed road stone carving street | HEBEI | QUYANG | LINEAR |
| 2 | Shilin QuXin Road stone carving street | HEBEI | QUYANG | LINEAR |
| 3 | Street of stone carving in Yangping Town, Quyang | HEBEI | QUYANG | LINEAR |
| 4 | Shandong Jiaxiang stone carving park | SHANDONG | JIAXIANG | MESH |
| 5 | Chongqing Dazu Rock Carving Cultural and Creative Park | CHONGQING | DAZU | MESH |
| 6 | Quanzhou Huian Chongwu Town, the largest stone carving market in the country | FUJIAN | HUPAN | LINEAR |
| 7 | Hui'an stone trading center | FUJIAN | HUIAN | LINEAR |
| 8 | Hui'an reception industrial zone | FUJIAN | HUPAN | MESH |
| 9 | China Stone City, Shuitou, Nan'an, Fujian | FUJIAN | SHUITOU | MESH |
| 10 | Stone Carving Street, Construction Avenue, Nanyang, Henan | HENAN | NANYANG | LINEAR |
| 11 | Dali G214 national road stone carving street | YUNNAN | DALI | LINEAR |
| 12 | Wuhan Jincheng International Stone City | HUBEI | WUHAN | MESH |
| 13 | Jiangsu Wuxi to Ding Shu town stone carving market | JIANGSU | WUXI | LINEAR |

In the distribution of stone carving streets, the north and south regions are more balanced, with 8 in the south, accounting for 62%, and 5 in the north, accounting for 38%. It can be seen that Fujian Huian and Hebei Quyang are the most concentrated, with three each, accounting for a total of 46% of the overall. In terms of spatial pattern, eight are linearly developed and five are reticulated neighborhoods. However, the stone carving streets differ in terms of visual representation of the streetscape due to the materials of their handicrafts and the characteristics of local techniques and customs. For example, (a) Qu Yang, Hebei Province, is dominated by Chinese white jade, stone carving street space pattern with large areas on both sides of the white steadily occupying the visual center; (b) Jiaxiang, Shandong Province, represented by azure stone, mostly do pagodas and other large structures, with green and gray pagodas stand in layers to form a rich hierarchy of space; (c) Huian, Fujian Province, represented by granite, it is said that 90% of the Japanese tombstones from here, the southern gate of Quanzhou -- Nan'an Shuitou China Stone City near, in Quanzhou Huian carving arts and culture park, Xinhong stone display field and other large venues, as well as Quanzhou Huian Chongwu town streets, Huian stone carving trading center roadside, white, light gray statues, structures, etc., large and small, high and low, lined up, extremely spectacular.

Wood/Root Carving Streets

The art of wood carving in China also has a long history, in which root carving works are self-contained and have outstanding characteristics in wood carving due to their large size. Zhejiang Yueqing, Zhejiang Dongyang, Fujian Putian, Guangdong Chaoshan, and Yunnan Jianchuan are the five most recognized hometowns of wood carving in China, while Fujian Minhou Shangjie and Jianou, Sichuan Lushan, Zhejiang Kaihua and Zhejiang Ningbo Xiangshan are the hometowns of root carving. In addition, according to China's wood processing industry statistics in 2018, Shandong, Jiangsu, and Guangxi are the top three provinces and regions in China for wood-based panels production; Jiangsu, Zhejiang, and Anhui are the top three provinces and regions for wood and bamboo flooring production; Guangxi, Guangdong, and Yunnan are the top three provinces and regions for forestry chemical products production in China. Combined with the information to exclude furniture and too small size of wood/root carving handicraft street, the final selected wood/root carving street research object is a total of 11 (Table 2).

Table 2. Selected Wood/Root Carving Streets of Large-sized Handicraft Streets

| No. | Name of the street | Province | City/County/District | Spatial pattern |
|-----|---|----------|----------------------|-----------------|
| 1 | Fuzhou Jianping Village Root Carving Market (both sides of Wulongjiang Avenue, near the new campus of Fujian Normal University) | FUJIAN | FUZHOU | LINEAR |
| 2 | Pukou Village Root Carving Street (near the side of National Highway 316) | FUJIAN | FUZHOU | LINEAR |
| 3 | Minhou County wood/root carving street | FUJIAN | FUZHOU | LINEAR |
| 4 | Jian'ou City, Xudun Town, Jianou Root Carving City | FUJIAN | JIAN'OU | MESH |
| 5 | Shangtang Carving Art Street, Quanzhou, Fujian | FUJIAN | QUANZHOU | LINEAR |
| 6 | Guangxi Guilin root carving market | GUANGXI | GUILIN | LINEAR |
| 7 | Suzhou Qi Shi Root Carving Market | JIANGSU | SUZHOU | LINEAR |
| 8 | Qingzhou South Wangmou Town root carving street | SHANDONG | QINGZHOU | LINEAR |
| 9 | A street of root carvings in Lushan County | SICHUAN | YA'AN | LINEAR |
| 10 | Jianchuan wood carving street in Yunnan | YUNNAN | JIANCHUAN | LINEAR |
| 11 | Hubei Wenjiang District Flower and Tree Trade Center | HUBEI | WENJIANG | LINEAR |

In terms of the distribution of wood/root carving streets, it can be seen that the concentration is in the southern region of China, with a total of 9 articles, accounting for 90%, and only one is located in the northern region. In terms of provinces, the Fujian region is the most concentrated with 4 of them. In terms of spatial patterns, nine are linearly developed and one is a networked neighborhood. In terms of streetscape combining wood/root carving streets with handicrafts, there are also some differences among streets. For example, (a) the root carving market in Shangjie, Minhou County, Fujian Province was once the largest root carving market in China, and the width of the stores in the root carving street was narrow, but the depth was long to facilitate the placement of more root carvings for indoor display, while the street area where raw materials of cypress were sold formed a spatial pattern of a large area of root materials laid flat on the ground and black tarpaulins propped up on wooden sticks above; (b) the flower and wood trading center in Wenjiang District, Hubei Province had both raw materials and finished handicrafts, raw materials are stacked outside the store door, forming a rugged and changing interface of the street, in the selection of raw materials will be placed in the middle of the street, forming a temporary field of cypress, while finished handicrafts placed indoors; (c) Jianchuan, Yunnan has the characteristics of the Bai minority wood carving, Jianchuan wood carving art town of wood carving stores often in the outdoor processing of materials outside the door, the building The wood carving doors of the town are also a major feature of its ancient style.

Mahogany Furniture Streets

Large size handicraft street there is another category worth noting, is the mahogany furniture street. From the development of furniture industry clusters, China has formed furniture industry clusters, mainly including the Yangtze River Delta, Pearl River Delta, Bohai Sea, Northeast and Western 5 large regional industry clusters, several clusters have certain advantages of industrial characteristics (Manja K. Kuzman, et al.,2023). Specifically, Zhongshan, Guangdong (including Dayong and Shaxi), Fujian Xiangyou (including the town of Pontou, Douwei town and Dazhi town, Longhua town, Lai Dian town, Damxia craft city, etc.), Guangxi Pingxiang, Hebei Dacheng, Zhejiang Dongyang (including Nanma town, Hengdian town, painting water town) five high-profile, store intensive, and known as the five mahogany furniture base. In addition, Guangxi Chongzuo, Guangdong Xinhui, Jiangsu Suzhou is also a well-known mahogany production base. A total of 11 rosewood furniture streets were finally selected for the study (Table 3).

Table 3. Selected Mahogany Furniture Streets of Large-sized Handicraft Streets

| No. | Name of the street | Province | City/County/District | Spatial pattern |
|-----|--|-----------|----------------------|-----------------|
| 1 | Guangxi Chongzuo Friendship Town Redwood Cultural Expo City/Redwood Furniture Street | GUANGXI | CHONGZUO | MESH |
| 2 | Dongyang Wood Carving Town | ZHEJIANG | DONGYANG | MESH |
| 3 | Dongyang China Wood Carving City | ZHEJIANG | DONGYANG | MESH |
| 4 | Dongyang Garden Town Mahogany Furniture City | ZHEJIANG | DONGYANG | MESH |
| 5 | Hengdian Mahogany Furniture Center | ZHEJIANG | HENGDIAN | MESH |
| 6 | Global Craft City, Bengtuo Town, Xianyou County, Fujian | FUJIAN | XIANYOU | MESH |
| 7 | Xianyou Baxia Craft Street | FUJIAN | XIANYOU | LINEAR |
| 8 | A street of mahogany production in Guandao | FUJIAN | XIANYOU | LINEAR |
| 9 | Xianyou Douwei Town, a street of mahogany furniture | FUJIAN | XIANYOU | LINEAR |
| 10 | Hebei Dacheng Mahogany Antique Street | HEBEI | DACHENG | MESH |
| 11 | Guangdong Jiangmen Xinhui Classical Furniture City | GUANGDONG | JIANGMEN | MESH |

The distribution of the rosewood furniture street, similar to the wood/root carving street, can be seen concentrated in the southern region of China, a total of 10, accounting for 91%, with only one located in the northern region. In terms of provinces, again the Fujian region is the most concentrated, especially Xiangyou, with 4, accounting for 36% overall. In terms of spatial patterns, just three are linear developments and eight are reticulated blocks. In terms of the streetscape of the rosewood furniture streets, the pattern of wood carving crafts mostly placed indoors is continued. However, in terms of overall spatial form, such as the length of the street, the redwood furniture street is usually longer; the width of the openings along the street store façade is greater. Specifically, there are two main patterns. For example, (a) Dongyang Wood Carving Town, China Wood Carving City, Hengdian Mahogany Furniture Center, Garden Mahogany Furniture City, etc., mainly in the form of furniture city, more mahogany furniture placed indoors; (b) the first street of Chinese classical craft furniture in Bashia Village, Pungtuo Town, Xiangyou County, Putian, Guandao Mahogany Production Street, etc., is several kilometers long, and large-sized handicrafts cannot be seen visually at the outside of the street, mainly in the space mode of the former store and the latter factory. In addition, in the street façade, Nanma Town Garden Village Liutang area of the street façade to do the traditional eaves and columns, to a certain extent reflects the characteristics of the traditional, classical mahogany furniture here mainly. Jiangsu Suzhou Xiangcheng Likou Su's redwood flowers a street in the architectural space also classical architectural elements for the façade, the neighborhood quality is relatively high, in function with cafe support, etc.

Materials and Method

Drawing on the "Multicraft and Holistic Studies of Production" technical approach to craft studies in archaeology and anthropology, this study compares and synthesizes different large-scale craft streets from the same period in contemporary China. The study is based on The lists of the China Craft Revitalization Catalogue, and the National Intangible Cultural Heritage Catalog (traditional arts and traditional crafts). The types and scope of large-size crafts are identified. After that, the main sales locations of large-size handicrafts were identified based on the corresponding city areas labeled in the two documents. The locations were also examined by satellite maps of craft store POI (Points of Interest) and Pictures or Comments from Social Media to confirm their validity. Finally, 35

large-scale handicraft streets within mainland China were selected as the research cases of this paper. To summarize the general morphological characteristics of large-size handicraft streets in China, the spatial patterns of the 35 handicraft streets mentioned in the previous section are roughly classified based on "Mesh" or "Linear" classification of the 35 handicraft streets mentioned above, satellite maps are used to verify the morphology based on the typological underlay analysis technique (Trancik, R., 1991), and collect (a) characteristics of the surrounding built environment; (b) characteristics of the urban transportation network and roads; and (c) characteristics of the street buildings and urban design. Based on the characteristic data statistics, the final large-scale handicraft street morphology distribution law is obtained. At the same time, the study further researches and explores the relationship among the morphology, location, and transportation conditions, formation age, and background of large-scale handicraft streets at different development stages. Drawing on Rossi's "Third" typology, the study superimposes a "Mesh" or "Linear" morphological categorization on the temporal and spatial developmental factors of history. The study superimposes a historical temporal and spatial element on the morphological classification of "Mesh" or "Linear". The key cases are selected concerning the ranking of the geographical popularity of the crafts, the output value of the crafts and the number of people employed in the urban area, and the selection of craft streets of a certain scale to ensure their representativeness. The data for this study was collected from (a) urban history with road network data from the literature review; as well as (b) physical dimensions of the street and buildings on both sides of the street from the field survey. Based on this, (c) the spatial elements and imagery analysis drew on Aldo Rossi (1984)'s "analogical" urban analysis technique, which extracts (simplifies) and assigns shapes (restores to the original state) to the spaces formed by the large-scale artifacts. Based on the above works, the overall morphological pattern of the large-size handicraft street at different stages of development and the relationship with the handicraft itself can be summarized.

Results

Result 1: General morphological characteristics of large-size handicraft streets in China

Based on the integrated analysis of 35 streets, it is shown as follows:

(a) Most of the large-size handicrafts are taken from the local area, -therefore they have a closer relationship with the local natural environment such as mountains and forests, and are mostly located in the suburbs of the city with ample sites. Therefore, it is obvious from the streetscape, for example, Nanyang stone carving street (Figure 1) that the streets are mostly lined with 1-3 story self-built houses; the streets have a large value of width-to-height ratio and are visible from the sky; there are a large number of stores in the same industry with a high degree of aggregation; and the individual stores are large in size, with very few very narrow storefronts;



Figure 1. Streetscape of Nanyang stone carving street (Photo by Author).

(b) 60% of the large-size handicraft streets have a linear spatial pattern, distributed on both sides of wide, multi-lane roads. This is mainly because the trade of large-size handicrafts requires long-distance transportation by trucks and has a high demand for the convenience of land transportation;

(c) The streetscape of 87% of the large-size handicraft streets exhibits large-size handicrafts of raw materials or semi-finished products densely placed in front of buildings, creating a novel spatial experience when people walk through them. This also affects the design of the street space, as large-size handicrafts need to occupy a larger display space in front of the stores, resulting in a relatively wide distance between the driveway and the building, creating a small square in front of the door.

The specific mode is represented in **Figure 2**.

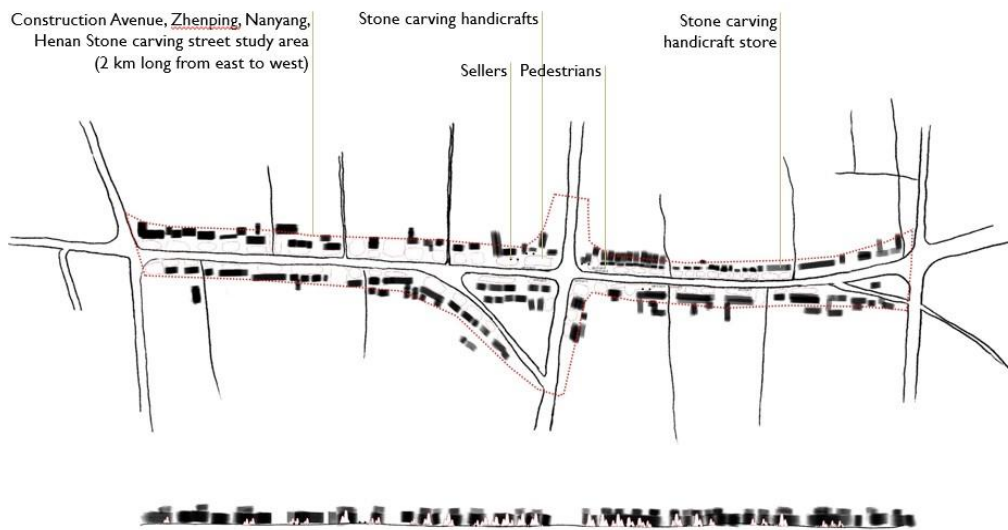


Figure 2. Spatial image of Nanyang stone carving street (Drawn by Author).

Result 2: *The morphological characteristics of the large-size handicraft street in China during different periods*

On the other hand, the study can reveal that large-size handicraft streets are closely related to industrial development and government policies, and show different street morphological characteristics in different development periods.

Initial linear form: a street next to a national highway - Quyang stone carving street as an example

60% of the large-size handicraft streets are linear forms, all formed by natural gathering, which are well adapted to the high requirements of transportation for large-size handicrafts. In the spatial development pattern, most of the stone raw material production areas and major transportation routes as the basis of advantage, from several nearby professional villages converge to form a number of stores by the national highway, eventually forming more than 1 km long stone carving street.

Quyang stone carving street, for example, its development through the rise of stone carving sales, traffic, and urban planning, and eventually formed a typical linear spatial pattern of a large-sized handicraft street (Figure 3). Quyang is the hometown of Hanbai Marble. The villages in the vicinity of Huangshan Mountain have developed rapidly due to their geopolitical advantages and the drive of famous carvers, and gradually formed professional stone carving villages, such as Xiyangping, Dongyangping, Xiguo, and Dongdi Village, which are close to Huangshan Mountain and convenient to get materials, so most of the people in this area are engaged in carving and are highly skilled. With the development, gradual generation, and growth of the stone carving industry stone carving crafts increased, making the number of local craft dealers increased greatly and the scale expanded. In 1918, Quyang County Government repaired the big carriage road from Ding County to Fuping, which was the first road built in

Quyang County. 1928, the spring, Quyang through the river to Tang County road was built. 1969, the National Highway G234 Xing Yang line was officially built, which formed the material basis of today's Quyang stone carving street. The construction of the highway provided convenient conditions for the sale of Quyang stone carvings. The once stone carving bazaar and stone carving village gradually moved to both sides of the national highway, which is closer to the source of customers and logistics and has a stronger public character. In terms of spatial elements and imagery, today's Quyang Stone Carving Street still maintains its naturally formed appearance. The large white stone carvings have become a new urban landscape structure, with a curtain superimposed directly on the city's roads and buildings.



Figure 3. The spatial image of Quyang stone carving street (Developed by Author based on Baidu Map).

In 2010, Quyang County launched the first county cultural industry planning in Baoding City, the sculpture culture industry park as the core of promoting industrial development, planning a "city, a line of three communities" development pattern. A large number of stone carving businesses began to concentrate along the Quxin Highway, a major north-south axis of the city. Today, on the carving avenue of Yangping carving town, there are more than 2,000 stone carving enterprises on both sides of the 10-kilometer-long highway, and each enterprise has large and small stone carvings placed at the entrance. It can be said to be a continuation of the linear spatial model of development.

Developing reticulated form A: Street network with higher publicness - Take Shandong Jiexiang Stone Carving Cultural Industrial Park as an example

Among the handicraft streets in the mesh form, 46% of the streets are with outwardly displayed handicrafts. These craft streets are usually located in non-core areas of the city but easily accessible by transportation; the surrounding commercial facilities are relatively large; the scale of the park is moderate and not too large; and the spatial pattern of the single street is similar to the initial linear form. Although the name contains "park" or "city", it is not an isolated area surrounded by a company, but can still be seen as a street network of streets.

Jiexiang Stone Carving Culture Industrial Park is a typical example (Figure 4). It is located in the eastern part of the urban area of Jiexiang County, built in 1999 and put into operation in 2000 with nearly 100 enterprises, is the largest stone carving cultural industry gathering area in Shandong Province, mainly engaged in the processing and sale of stone carving products. Although its formation has the role of government guidance, in the form of businessmen can be seen to have relatively more freedom. In the division of the plot, although it is very regular, a closer look at which the plant mostly uses the original building or the new low houses, the building occupies a very small scale, but the open space left for large handicrafts such as pagodas and stone statues to be displayed is very

wide. In terms of spatial elements and imagery, if large handicrafts play a layer of the curtain in the initial linear form, then in the developing reticulated form A, the arrangement and combination of large handicrafts in the neighborhood form a jungle, like forming the exoskeleton of a building, forming a spectacular visual experience. Jiaxiang stone sculpture is made of locally produced azurite as the main raw material, supplemented by marble, granite, Chinese white jade, and other stones, and the overall color presents a neutral gray, which enables it to blend in better with the park's architecture.



Figure 4. Spatial image of Jiaxiang stone carving park (Developed by Author based on Baidu Map and relevant files).

Next, the park will effectively strengthen the productive protection of stone carving art, guide stone carving enterprises to increase the production of traditional hand-carved products, and protect and inherit the traditional skills of Jiaxiang stone carving. At the same time, make full use of the opportunity of the Chinese Sculpture Society, Shandong Arts Institute, and Shandong Arts and Crafts Institute to establish a stone carving art creation base and teaching practice base in the park, and introduce young sculptors and university graduates to establish creation studios in the park to drive the continuous improvement of stone carving art in Jiaxiang. It can be seen that the Jiaxiang County government is more focused on cultural inheritance and protection, using the park as a place for productive conservation, education, and research, and as a way to drive the economic development of the industry, without the pursuit of expanding the spatial scale.

Developing Form B: Parks with low publicness - Take Mabao Root Carving Creative Industrial Park as an example

Among the handicraft streets in the mesh form, 54% of the streets are almost devoid of any out-displayed handicrafts. These handicraft streets are usually located far away from the urban fringe area but easily accessible by transportation; there are few commercial support facilities around; the scale of the park is large; in terms of spatial pattern, they are similar to the developing reticulated form A only in terms of road network pattern, but there are some differences in streetscape and the publicness is low.

The developing form B is a product of strong government planning behavior. For example, the root carving market in Shangjie, Minhou County, Fujian Province, was once the largest root carving market in China, with a linear spatial pattern, filled with nearly 1,000 root carving stores of all sizes, mostly family-style root carving workshops with "front and back stores, factory and store in one". Since 2005, along with the rapid development of the root carving market, the number of stores here has been high. However, with the implementation of the National Haixi Plan and the construction of Fuzhou University City in Fujian Province, the traditional and spontaneous root carvings are facing the problem of relocation, and the renovation plan launched in 2020 has made this street of wood and root carvings history. The newly built Mabao Root Carving Creative Industrial Park nearby

has taken over some of the artisans' relocation. Minhou root carving industry creative park is located in the town of Shangjie Mabao village back garden, west of the Beijing-Fuzhou high-speed highway, with a total building area of 125,000 square meters, there are 50 large and medium-sized root carving production enterprises stationed, set production, display, sales and other functions in one. This representative developing form B, from a street into a garden, is a major initiative to promote the transformation and upgrading of the root carving industry in Minhou County, the root carving on the street to achieve the transition from home-based production to industrial park clustering development. However, unlike the street network in developing form A, the public nature of this park is relatively weak. The park is dominated by buildings and factories, with few large outdoor spaces for the display of large handicrafts. Of course, this is partly because the root carving works themselves use relatively little outdoor space. However, when it is completely indoors, the connection between handicrafts and the city is cut off, and it becomes invisible. This form corresponds to a transaction mode more also transformed into a remote ordering category, so that a large number of large handicraft display spaces of various business houses become less important, and only a comprehensive display field or online display is needed.

The construction scale of the second phase of the project will be expanded to 300 acres, which will integrate the functions of a production base, entrepreneurial park, training base, and product display park to accommodate more root-carving enterprises. Meanwhile, Fuzhou High-tech Zone plans to build a national wood and root carving industry demonstration base around here, the wood and root carving industry planning to re-improve, to build based on Fuzhou, facing the whole country, interaction with Taiwan, set crafts R & D, master studio, cultural and creative base, training base cultural exchange, exhibition and display, by sales, e-commerce platform, leisure experience, evaluation and identification equal to a large comprehensive demonstration base. Nowadays, customers from all over the country can both stroll around the root carving street still preserved in Jianping Village and buy some ancient root carvings and also go to the "high class" root carving industry creative park to buy fine products and artworks with high skills.

Discussion

The significance of the results of the work is mainly manifested in the following aspects:

The relationship between the results and the original hypothesis

The study observed that the street morphology of large-size artifacts has a universal pattern, while possessing the characteristics of different morphologies at different stages of development, confirming the initial hypothesis of the proposed scientific question. This adds valuable lessons from China's large-size craft streets to academic discussions about the urban form and creative placemaking of craft-oriented streets (Lucas, R., 2020; Wilkinson-Weber, C. M., & DeNicola, A. O., Eds., 2020). At the same time, the findings of this study succeed in expanding the boundaries of craft street research beyond the traditional type of craft street that focuses on cultural heritage preservation (Sharmin, F., & Hossain, S. T., 2020), and suggests more possibilities for the impact of contemporary craft production on streets.

Interpretation in conjunction with the results of previous studies

Regarding the display and street space patterns of large-size handicrafts, the study observed that most of the large-size handicraft street patterns conform to Craft Ribbon theory and are mostly linear; meanwhile, reticulated spatial patterns were also found in some research subjects and subdivided into the more public street network pattern and the less public park pattern in the discussion of specific cases. It proves that the theory of "cluster" development has a clear practical application to large-size craft streets (Yang, X., Xu, H., & Ni, S., 2021). It indicates that large-scale handicraft streets are formed spontaneously or guided by industrial agglomeration, in line with the spatial law of industrial agglomeration.

In terms of the street space pattern, the results of the study found some differences in the spatial roles played and imagery formed by artifacts in different forms of craft streets, such as curtain, skeleton, and stealth. This reflects that the outdoor display of large-sized handicrafts is better than the indoor display, which is in line with the consideration of the richness of the street interface in urban design and neighborhood design, and brings stronger public, economic role, and cultural value to urban image enhancement to the area. This challenges the traditional

concept of shopping mall/street theory (Jones, P., Hillier, D. and Comfort, D., 2007; Montgomery, J.,2007) which emphasizes only the spatial effect of the mix of businesses and tenants.

Possible explanations for unexpected results and observations

This is an unexpected finding in the study about the extinction of the large-scale root-carving street. In Guilin, Guangxi, there are at least twenty to thirty roots carvings along the road from the intersection of Wayao Wholesale City toward Qifeng Town, forming a street of Wayao root carvings, also known as the root carving and curiosity market in Pingshan Beicun, Xiangshan District, Guilin City, where, as well as to Yanshan, are the places where extra-large scale root carvings are sold and displayed. The specific space performance for oversized handicrafts stands roadside, with a simple shed to do cover. But along with the root carving market falling, since 2018 the street rarely sees large root carvings. 2022 after September there was a collective demolition. No coincidence, Yunnan Tengchong Beihai wetland near the strange stone and wood market, is the root carving market plus jade market space model, also due to the government's open plan to be land acquisition and demolition. The demise of large-size craft streets, especially root carving streets, continues to occur, and industrial decline, and new local development plans may have influenced this. An investigation and intervention program for this phenomenon would be a meaningful direction for follow-up research.

Conclusion

Based on literature research and fieldwork, this study combines satellite maps, urban traffic and architectural analysis with multiple case studies to discover the commonalities of large-scale craft street patterns and individual patterns at different stages of development. The study proposes a new research object, the large-scale craft street, and incorporates it into the academic context of urban planning, cultural heritage protection, and promotion of creative industries, placing the non-traditional type of Craft Street into the academic research horizon, contributing to a refined and in-depth study of street research in the field of architecture and urban design. The study finds that large-scale handicraft streets mostly follow the law of linear development, and at the same time, there are also phenomena that follow the unfolding of clustering characteristics and connects them with the existing research on handicraft-related urban neighborhood morphology, which confirms that large-scale handicraft streets conform to the general spatial laws of industrial agglomeration and neighborhood morphology. The study reveals the spatial morphology of linear and reticulated neighborhoods at different stages of development and the driving mechanisms behind them, which provides a more comprehensive theoretical reference for the planning and design of future large-scale crafts neighborhoods. In addition, the study proposes that large-scale crafts as an element reshape the street interface with curtain-liked and skeleton-like spatial imagery, which brings stronger public and economic roles, challenging the traditional ideas and concepts of craft streets and even commercial streets that emphasize the layout of business categories, and belittle the interaction between crafts and space, and the creation of crafts spatial quality. The study of large-size handicraft streets has important insights and guiding significance in refined urban design, creative place-making, and spatialized protection of intangible cultural heritage and tangible cultural heritage. In the future, research on specific store units, flow lines, functional zoning, and dynamic mechanisms of large-size handicraft streets will be continued in order to build on the foundation of this study. In addition, more studies of craft cluster-led streets with similarities in spatial scales are expected to emerge.

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Conflict of Interests

The author declares no conflict of interest.

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